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FIRE SUPPORT IN THE REDUCTION OF AN ENCIRCLED FORCE

A FORGOTTEN MISSION

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

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Fort Leavenworth, Kansas
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Among the shortfalls identified are: current attention is more focused on breaking out of an encirclement than on forming an encirclement; when encircling an enemy is addressed, discussion stops after the encirclement is formed and before reduction begins; field artillery procedures do not separately address this mission; friendly or enemy use of chemical or nuclear weapons has not been considered; the requirement to simultaneously support reduction and exploitation operations has not been addressed; there is a need for an artillery commander at echelons above corps.

The study concludes that the process of reducing a large encircled enemy force is sufficiently different from other operations that it should be separately addressed. Although the "doing" of the component parts of the artillery aspect of this operation are doctrinally established, tying them together into a synergetic package requires innovative attention. Resulting field artillery doctine, tactics, and techniques derived are equally applicable in reducing an isolated enemy force that has broken through or been inserted into our rear area as they are in the reduction of an offensively encircled enemy.

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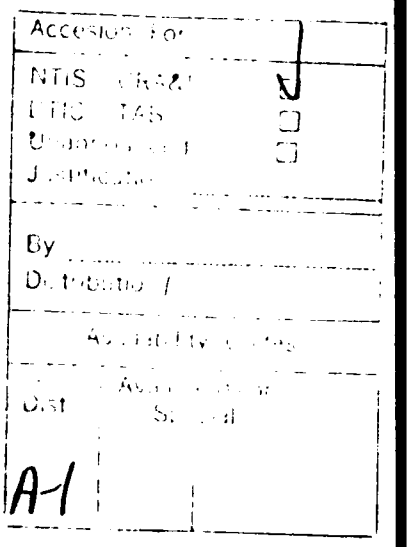

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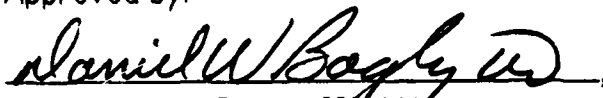 , Thesis Committee Chairman

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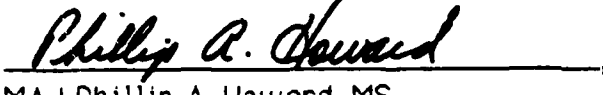 , Member, Graduate Faculty

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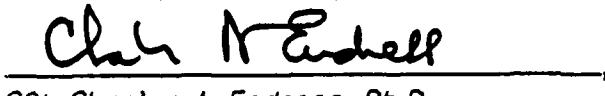 , Member, Consulting Faculty

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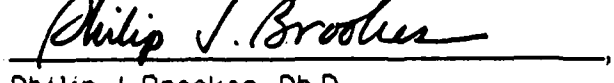 , Director, Graduate Degree Programs

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ABSTRACT

FIRE SUPPORT IN THE REDUCTION OF AN ENCIRCLED FORCE - A FORGOTTEN MISSION, by Major Joel A. Buck, USA, 157 pages.

Using historical analysis and survey, this study examines the sufficiency of U.S. field artillery doctrine, tactics, and techniques to support the destruction of an encircled enemy. Focus is on identifying existing weaknesses by comparing applicable lessons learned from history with the practices spelled out in current manuals. The Allied attempt to encircle and reduce the German forces within the Falaise-Argentan pocket in central France during August 1944 and the Soviet Belorussian Offensive and subsequent encirclement and reduction of German forces during June 1944 are examined. The results of a survey completed by the **V** and **VII** U.S Corps artillery commanders on the subject are also included.

Among the shortfalls identified are: current attention is more focused on breaking out of an encirclement than on forming an encirclement; when encircling an enemy is addressed, discussion stops after the encirclement is formed and before reduction begins; field artillery procedures do not separately address this mission; friendly or enemy use of chemical or nuclear weapons has not been considered; the requirement to simultaneously support reduction and exploitation operations has not been addressed; there is a need for an artillery commander at echelons above corps.

The study concludes that the process of reducing a large encircled enemy force is sufficiently different from other operations that it should be separately addressed. Although the "doing" of the component parts of the artillery aspect of this operation are doctrinally established, tying them together into a synergetic package requires innovative attention. Resulting field artillery doctine, tactics, and techniques derived are equally applicable in reducing an isolated enemy force that has broken through or been inserted into our rear area as they are in the reduction of an offensively encircled enemy.

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Chapter 1

INTRODUCTION

This thesis examines the adequacy of U.S. Army field artillery doctrine, tactics, techniques, and procedures to support the reduction of an encircled enemy force. The problem can be stated by asking, "Is the U.S. field artillery prepared to support the reduction of an encircled enemy force on the AirLand Battlefield?". This, in turn, raises the questions: How is this mission unique? What lessons can history teach us? Is current doctrine adequate? How does "threat" doctrine address the issue? How well do existing tactics, techniques, and procedures apply to the reduction of an encircled enemy force?

AIRLAND BATTLE DOCTRINE

The AirLand Battlefield will rarely maintain linear characteristics. The high speed and long range of today's super-lethal forces will blur the lines between front and rear areas. It is also widely acknowledged that we must be ready to fight outnumbered and win. How do we do this?

The fundamental doctrine of AirLand Battle in FM 100-5, Operations, is in line with the Army's writing program spelled out in AR 600-70. It's clear, concise, and less than 200 pages long. The resulting lack of specificity, however, has frequently been criticized. The complaint that current doctrine raises more questions about such operations as encirclement than it answers is a familiar one.[1]

"While the fundamental doctrines of combat operations are neither numerous nor complex, their application is sometimes difficult."

GEN George C. Marshall
Introduction to 1941 FM 100-5

- Inflexible rules limit imagination and initiative and telegraph our intents.
- However, tactics, techniques, and procedures must be developed for executing doctrine.

Figure 1-1 Doctrine

The quote in Figure 1-1[2] is just as true today as it was on the eve of our entry into World War II. Inflexible rules must be avoided since they limit imagination and initiative and provide the enemy a fixed pattern of operation which he can more easily recognize and counter. However, the tactics, techniques, and procedures for executing the doctrine must be established.

Figure 1-2 below, entitled, "Family of Manuals for Doctrine, Tactics, Techniques, and Procedures" represents a plan for integrating fire support doctrine with maneuver doctrine through a family of field manuals. These manuals are to be compatible and synchronized with the Army's AirLand Battle doctrine. The doctrinal manuals provide a foundation for development of subordinate doctrine, force design, materiel acquisition, education and training. The series of tactics, techniques, and procedures manuals in the bottom part of the figure, not all of which are even titled yet, are more

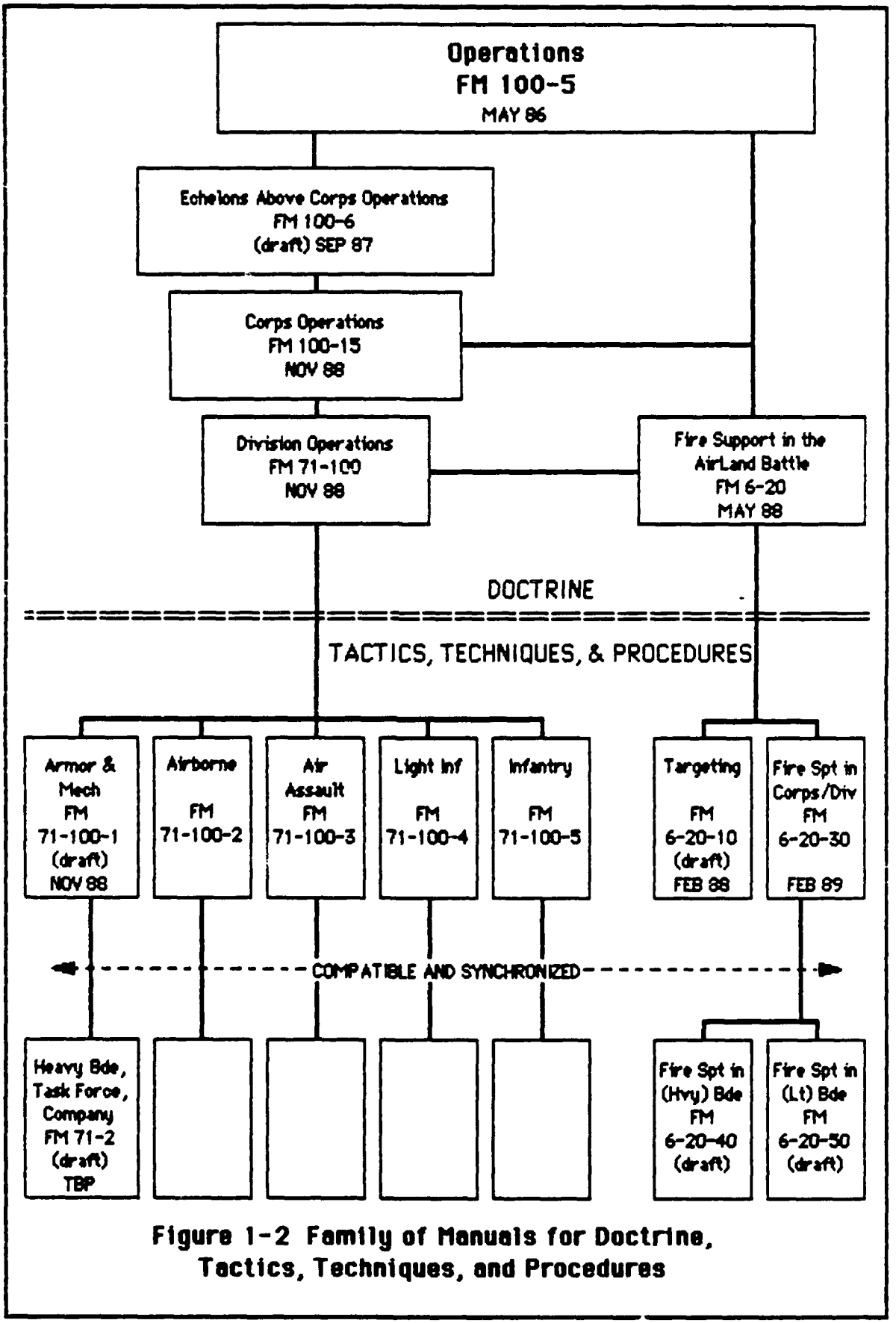

Figure 1-2 Family of Manuals for Doctrine, Tactics, Techniques, and Procedures

specific in showing how the doctrine will be applied and practiced at the various levels of command. Unfortunately, many gaps exist. Some manuals have not yet been written. In addition, delays have occurred in finalizing some manuals. All this results in a lack of guidance to Army units.

MODERN MOBILE COMBAT OPERATIONS

Mobile operations provide many opportunities to isolate, neutralize, or destroy enemy forces. In the attack, we want to strike where our enemy is weak. During the exploitation following early success, we expect to out-flank, cut-off, or encircle, entire enemy formations.[3] In the defense, we will bend first, then snap back and pinch-off the spearheads of attacking enemies. If an isolated enemy unit refuses to surrender, the encircling commander has three choices; ignore it, contain it, or destroy it. To ignore it is dangerous while to contain it may tie down maneuver forces, effectively removing them from the fight. The commander might not want to risk allowing enemy forces the freedom of moving around in his rear. The cost and risk of containing the encirclement for an extended time may likewise be unattractive. Reduction of the encircled enemy force is, in most cases, the proper action. Historical examples show actions such as these usually require massive use of fires.

Although AirLand Battle doctrine foresees the appearance of encircled pockets of resistance, it does not suggest appropriate measures for the destruction of these pockets. The lack of established tactics, techniques, and procedures for conducting an encirclement leaves commanders and units unprepared to conduct such an operation. This void is finally being

addressed. The latest edition of FM 100-15, Corps Operations, addresses this issue of heretofore ignored pockets of enemy, but only in broad terms.[4]

Forming the encirclement is only the first half of the problem. The Russians and the Germans learned during World War II that this was not difficult, but defeating the encircled force proved challenging. How we should deal with an encircled enemy--the tactics, techniques, and procedures--are not detailed in any manual.

Usually, the encircling force has positional advantage; the encircled force the advantage of short internal lines of communications and the ability to quickly shift forces. The threat to the encircled force commander is clear. The encircling commander, however, is threatened by an enemy relief force from outside the encirclement, by the encircled force trying to break out, or from a combination of both.

The reduction of an encircled force requires special maneuver and fire control measures. Normally, maneuver units share only lateral boundaries. In an encirclement, however, they share forward boundaries as well. Additionally, in a reduction operation, areas of operation converge toward the center of the enemy which squeezes lateral boundaries closer and closer together.

Nuclear and chemical weapons can provide a decisive advantage to either the encircled force trying to break out, or to the encircling force looking for a means to quickly reduce his encircled enemy. The clustering of concentrated forces will present tempting targets for weapons of mass destruction. Although the possibility of the encircled force using these weapons cannot be ignored--desperate men make desperate decisions--it is

the encircled force which offers the better target. The intermingling of friendly and enemy forces around the perimeter of an encirclement, however, will usually preclude the use of these types of weapons.

The fluidity of the AirLand Battlefield will increase command and control difficulties and hinder the commander's opportunity for decisive combat. In World War II, artillery units had to simultaneously repel enemy counterattacks while supporting the reduction of encircled enemy forces.[5] This argument is used today to support the position that artillery still needs a better direct fire capability for self-defense. The doctrine, tactics, techniques, and procedures for employment of artillery in reducing an encirclement must be firmly set and faithfully practiced before the next battle.

STEPS OF AN ENCIRCLEMENT

AirLand Battle Doctrine stresses the tenets of agility, initiative, depth, and synchronization. The five steps of an encirclement, shown in Figure 1-2 below[6], provide a real test of our ability to apply these tenets. This is a fluid operation during which multiple steps take place simultaneously.

Step 1 - Penetration - The attacker must be able to rapidly concentrate overwhelming combat power and surprise by striking the enemy when and where he is unprepared. The speed needed to widen the penetration and roll back exposed flanks comes from attentive planning. Fire support must concentrate first on disrupting enemy defenses, then shift to protection of the flanks. Control of most fires is highly centralized in this initial step.

Step 2 - Link-Up - Operating on converging lines of action calls for close coordination and control. Synchronization of fire support is critical to protect exposed flanks while preventing fratricide. Control of some fires is decentralized during this step.

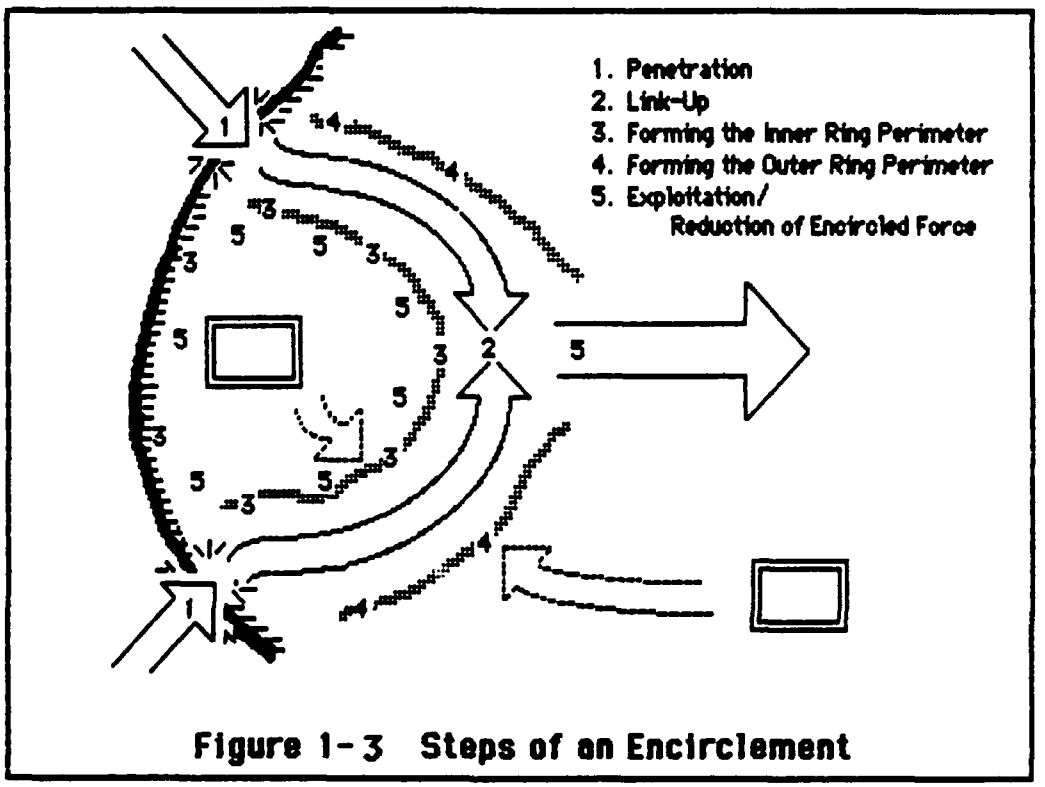

Figure 1-3 Steps of an Encirclement

Step 3 - Forming the Inner Ring Perimeter - Next, infantry heavy forces pour through the ruptured enemy lines, quickly forming an inner ring. The inner ring blocks escape routes and exerts pressure to contain the encircled forces. Control of fire support assets now becomes more complicated. Effective organization for combat becomes critical. Fires must be synchronized to simultaneously support maneuver forces operating in opposite directions; into the encircled enemy as Step 3 develops, and out into enemy territory as Step 4 begins. Bold shifts of 1600 to 3200 mils (90 to 180 degrees) were routine and split-battery missions frequently fired

simultaneously in opposite directions during encirclement operations. This was true during the Falaise-Argentan operation and later in the Ruhr region. Control of fires is forced to become more decentralized during this step to improve responsiveness to a rapidly changing tactical situation.

Step 4 - Forming the Outer Ring Perimeter - Fast moving armor forces exploit the breakthrough, complete encirclement of the enemy, and defend against attempts to relieve the encircled force. Fire support is now needed deep into enemy territory by centrally controlled general support artillery. Direct support artillery stays decentralized during the expansion of the outer ring. It has been argued within Soviet circles that this phase is not applicable today.[7] The premise is that attacking troops will need to develop a high speed offensive which simultaneously repels any counter-attacking enemy reserves while continuing to attack into the depths of the enemy formations. Thus, this step is merged with the exploitation portion of Step 5.

Step 5 - Reduction of the Encircled Force and Exploitation- The commander has two options during this step. He can either reduce the encircled enemy simultaneously with the exploitation or he can execute the reduction and exploitation sequentially. Either will require adjustment to the organization for combat which must be made while on the move. Under the second option, the commander must consider the effects of a pause in the battle. Then which should he do first, reduce or exploit?

Reduction of the encirclement will normally be accomplished by either fire alone, or by fire and maneuver.[8] Reduction by fire alone relies on bombardment (to include special munitions) and offers the advantage of

preserving manpower. Historically, bombardment alone has not been sufficient to compel surrender. Reduction by fire and maneuver is the surer method because it forces the enemy to surrender. The price paid is in manpower. Reduction by fire and maneuver incorporates at least two techniques; continuous external pressure (the classic siege), and repeated splitting of the pocket into smaller and smaller manageable pieces.

As the enemy tries to breakout, encircling forces must continuously adjust their lines. Instead of staying fixed in one place, the pocket of encircled enemy will begin to float. That is fine. In the words of Sun Tzu, "To a surrounded enemy you must leave a way of escape...Show him there is a road to safety, and so create in his mind that there is an alternative to death. Then strike."[9] An encircled enemy with no hope of escape could surrender. But, it could also "hunker down" and become a thorn in the side of the encircling force. It is extremely expensive in time, material, and manpower to rout out a determined defender. But, if we allow the encircled force some freedom to move, or float, about the battlefield, we can attack his flanks. He can then be reduced by cutting off and destroying him piece by piece. The challenge of orchestrating the systematic reduction of an encircled will increase as the pocket begins to float. Centralized control of fire support means is dictated.

Encirclements are done to deny the enemy the capability of defending in an organized manner by cutting of evacuation and relief routes. A corps may plan an offensive operation with the express purpose of encircling the enemy. So may the enemy. These forces can themselves become encircled. We may end up with an encircled enemy by design or chance. Regardless of how the encirclement happens, the reduction of the enemy will either be the

main effort of the corps or it will be a secondary effort behind the exploitation. When this happens, it is likely, though none of the manuals mentions it, that the deputy corps commander will be placed in command of the reduction effort as a part of the corps rear operations.

If the reduction effort becomes an economy of force operation, fire support assets will have to be split with most available assets organized under decentralized control to support the main effort, exploitation. Remaining fire support assets support the reduction effort under centralized control. Centralized planning and allocation of artillery assets must take place at the highest level (Corps in this example) in order to provide for decentralized execution required in support of a flexible maneuver plan.

ASSUMPTIONS

For purposes of this study, the following assumptions are made:

The principles of AirLand Battle Doctrine, as described in FM 100-5, Operations, are valid and portray an accurate representation of the interactions of the modern battlefield.

Encirclement of an enemy force can occur as a result of an offensive or defensive operational action, tactical action, or a combination of both. Regardless how the encirclement happens, reduction of the encircled enemy force is a tactical operation.

It is at the corps level that an encirclement operation becomes significantly different from any other operation.

Friendly use of special weapons, nuclear and/or chemical, to reduce an encircled enemy force is an option. Similarly, enemy use of such weapons is possible.

Existing U.S. field artillery force structure is fixed. This assumption is made to counter the observation that increasing available artillery will eliminate the problem.

AIRLAND TERMINOLOGY

For sake of clarity, these operational definitions are supplied:

Encirclement - This is "the isolation of a particular grouping of the enemy from the rest of his forces with the purpose of annihilation or destruction."[10] It can be a deliberate act or it can develop because of other actions. It can happen during defensive or offensive operations. Encirclement denies the encircled enemy force the capability to defend or attack in an organized manner by eliminating the enemy's freedom of maneuver.

Doctrine - "Fundamental principles by which the military forces guide their actions in support of objectives. It is authoritative but requires judgment in application."[11] Doctrine is concise, understandable, and should be written to foster initiative.

Tactics, Techniques, & Procedures - Tactics is the use of units in combat. Techniques involve the basic methods of using equipment and men. Procedures describe how to do a certain task. Hierarchically, doctrine is executed by tactics, the next level down is techniques, and procedures

provide the lowest level of detail.[12] Doctrine is enduring. Tactics, techniques, and procedures adopt to changes in equipment and capabilities.

Operational Art - "Operational art is the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations. A campaign is a series of joint actions designed to attain a strategic objective in a theater. A major operation comprises the coordinated actions of large forces in a single phase of a campaign or in a critical battle."[13]

Tactical Operation - Tactics "is the art by which corps and smaller unit commanders translate potential combat power into victorious battles and engagements. Engagements are small conflicts...of a few hours' duration fought between divisions and small forces. Battles consist of a series of related engagements... [and] involve larger forces -- divisions, corps, and armies."[14]

Reduction (Destruction/Neutralization) - "Destruction puts a target out of action permanently. Neutralization knocks a target out of action temporarily."[15] Reduction of an encircled enemy force is completed when the enemy has been neutralized, destroyed, or has surrendered. Soviet battlefield experience from World War II found that though an encircled enemy can be neutralized, destruction is usually needed.[16]

Additional terminology used within this paper is explained in Appendix A.

PARAMETERS

To narrow the focus of study and zero in on the principle thesis questions, the following limitations and delimitations are acknowledged.

Limitations are recognized conditions over which we have no control.

The recent U.S. Army deep operations experience is limited to the period July 1944 through May 1945. There were several reasons for this. The North Africa campaign was essentially a baptism of fire as the U.S. Army entered World War II. It happened too early and was too short for the execution of complex deep operations. The terrain and nature of the Italian campaign prevented its evolution beyond tactical maneuver warfare. It was not until Allied forces landed on Europe in 1944 that U.S. Forces were in a position to try what today's FM 100-5, Operations, calls "operations in depth." This has resulted in a lack of operational knowledge and limited historical sources.

In contrast, the Soviet Red Army had more than four years of experience at "operational depths" during World War II. They successfully executed more than ten major operational encirclements, defeating approximately 200 enemy divisions.[17] Their operations were characterized by wide frontages of 50-150 kilometers with penetrations to depths of over 100 kilometers.

Delimitations are conditions that have deliberately been imposed upon the research and analysis.

For purposes of this thesis, historical research concentrates on operations in which a corps or larger size force was encircled.

Analysis is limited to the role of a heavy U.S. Army corps in Europe focused on what is globally the most significant land threat to U.S. security interest; the Soviet Union and the ongoing buildup of Warsaw Pact military capabilities.[18]

While close air support, mortars, army aviation, and electronic warfare are all integral to the fire support process, scrutiny of their doctrinal employment is beyond the scope of this study. Focus is on the implications for the field artillery in reducing an encircled enemy.

SIGNIFICANCE OF THE STUDY

The mission of the field artillery is to destroy, neutralize, or suppress the enemy and to integrate all fire support assets into combined arms operations.[19] Encirclement operations are a significant part of modern combat and will be common on the AirLand Battlefield. If the field artillery is not prepared to support the reduction of an encircled enemy, then we risk costly mistakes and missed opportunities.

The U.S. Army has been so preoccupied with the concept of "winning the first battle" and being able to "fight outnumbered and win" that the encirclement is an operation that has been largely overlooked. The swift advance of the attack and the fluid nature of AirLand Battle will produce cut-off and out-flanked enemy groups. An encirclement may be planned or it may develop unexpectedly as the by-product of offensive or defensive action. Large isolated pockets of enemy in our "rear" cannot be ignored.

While the U.S. Army has begun to address forming an encirclement, ideas on reduction are in their infancy. The Soviets have long considered the forming of the encirclement and the reduction of the encircled force as one operation. Based on their experiences in the Great Patriotic War, the Soviet Army has developed extensive doctrine for encirclement operations. The encirclement is cited as the most decisive form of combat activity and makes extensive use of all forces and branches.[20] The Soviet Army has perfected and continues to embrace encirclement operations. Evolving U.S. Army AirLand Battle doctrine similarly implies the advantages of such operations. It has been asked, however, if the U.S. Army has the basis from which to successfully conduct encirclement operations.[21]

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[1]Robert J. Curran, "Shutting the Door: U.S. Army Doctrine for Encirclement Operations at the Operational Level of War," Masters of Military Arts and Science Monograph, Fort Leavenworth School of Advanced Military Studies (Fort Leavenworth, KS, 1986), p. 7.

[2]FM 100-5, Field Service Regulations - Operations (Washington, DC: HQ Department of War, 1941), p. iii.

[3]FM 100-5, Operations (Washington, DC: HQ Department of the Army, 1986), p. 120.

[4]FM 100-15, Corps Operations (Final Draft) (Fort Leavenworth, KS: US Army CGSC, 1988), pp. 7-23 thru 7-27.

[5]Viktor Antorovich Matsulenko, "Encirclement Operations and Combat" (From the USSR Report, translated by FBIS from MILITARY AFFAIRS, 31 January 1983), p. 187.

[6]Glantz, David M., "Toward Deep Battle: The Soviet Conduct of Operational Maneuver" (unpublished article, May 1985), p. 30.

[7]S. V. Shtrik, "The Encirclement and Destruction of the Enemy During Combat Operations Not Involving the Use of Nuclear Weapons," Voyennaya Mysl (January 1968), p. 284.

[8]FM 100-15, p. 7-24.

[9]Sun Tzu, The Art of War, translated by Samuel B. Griffith (New York: Oxford University Press, 1971), pp. 109-110.

[10]Matsulenko, p. 2.

[11]JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms (Washington, DC: The Joint Chiefs of Staff, 1987), p. 118.

[12]FM 7-72, Light Infantry Battalion (Washington, DC: HQ Department of the Army, 1987), p. 2-14 thru 2-15.

[13]FM 100-5 (1986), p. 10.

[14]Ibid.

[15]FM 6-20, Fire Support in the AirLand Battle (Washington, DC: HQ Department of the Army, 1988), p. 2-7.

[16]Matsulenko, p. 2.

[17]Shtrik, p. 280.

[18]White House Paper, "National Security Strategy of the United States" (Washington, DC: Office of the President, 1988), p. 5

[19]FM 6-20, p. 2-8.

[20]Matsulenko, p. 7.

[21]Curran, p. 2.

Chapter 2

REVIEW OF LITERATURE

Discussion of encirclement operations is conspicuously absent from most current U.S. military doctrine and literature. The term "encirclement" does not even appear in the Department of Defense Dictionary of Military and Associated Terms, JCS Pub 1. The definition of "encirclement" in FM 101-5-1, Operational Terms and Symbols, is shown in Figure 2-1. This definition reflects a purely defensive orientation. A successful encirclement will also cut air routes.

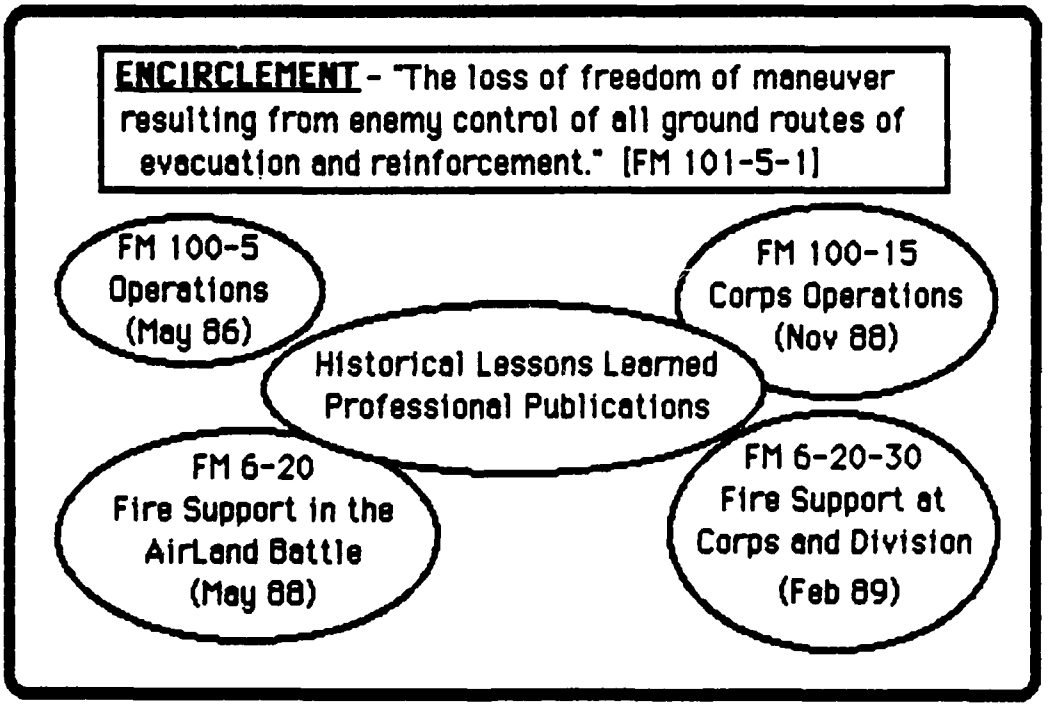

Figure 2-1 Review of Literature

In FM 100-5, Operations, the term "encirclement" is first mentioned as a variant which can develop from an envelopment.[1] The use of an "encircling force to envelop the fleeing force, cut its escape route, and, in conjunction with the direct-pressure force, destroy or capture it" is mentioned in the discussion of "Exploitation and Pursuit" in the offensive operations chapter.[2] However, there is discussion of the details for such an undertaking.

A better job is done in FM 100-15, Corps Operations, which devotes five pages to the "Encirclement of an Enemy Force."[3] Seven pages discuss the reverse, "Encircled Friendly Force Operations."[4]

"Encircled Forces" is the title of a section in FM 6-20-30, Fire Support at Corps and Division, but again, it only addresses encirclement from the inside looking out, the same as FM 101-5-1. Fire support considerations for the "Breakout Toward Friendly Forces" and "Link-Up Operations" are briefly discussed.[5]

Although encirclement operations have received little scrutiny in Army literature today, this has not always been the case. Evaluating lessons from World War II, the Historical Division, EUCOM, published the **GERMAN REPORT SERIES** in the early 1950's. These reports were written by Germans who had served in the war. In this series are two pamphlets which examine Soviet operations, particularly the Soviet encirclement of Germans, from the German point of view.[6]

Examination of World War II examples of encirclement operations in periodicals and articles has continued since the Korean conflict.[7] Publication of the 1976 edition of FM 100-5, Operations, ushered in the

return of the Army's focus on mid- to high-intensity conflict in Europe. The series of "how to fight" manuals that followed provided only a cursory acknowledgement of encirclement operations, prompting the appearance of more non-official writings on the subject.[8] The Army's defensively oriented doctrine touches on the problems of an encircled force trying to break out, but offensively oriented thinking on how to conduct an encirclement has been slow to appear. Again, it's been articles in professional journals and individual research which have led the way.[9]

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[1]FM 100-5, Operations (Washington, DC: HQ Department of the Army, 1986), p. 101.

[2]Ibid., pp. 119-120.

[3]FM 100-15, Corps Operations (Final Draft) (Fort Leavenworth, KS: US Army CGSC, 1988), pp. 7-23 thru 7-27.

[4]Ibid., pp. 7-16 thru 7-23.

[5]FM 6-20-30, Fire Support at Corps and Division (Coordinating Draft) (Fort Sill, OK: U.S. Army Field Artillery School, 1988), pp. 6-9 thru 6-11.

[6]Department of the Pamphlets No. 20-233, Historical Study: German Defense Tactics Against Russian Breakthroughs (Washington, DC: HQ Department of the Army, 1951) and No. 20-234, Historical Study: Operations of Encircled Forces: German Experiences in Russia (Washington, DC: HQ Department of the Army, 1952).

[7]Henry D. Lind, "Break-Out from Encirclement," Military Review (June 1951), pp. 49-62 and Joachim Schultz-Naumann, "The Demyansk Pocket, March-April 1942," Military Review (December 1957), pp. 77-84 are representative.

[8]Richard S. Kent, "Preparing for the Breakout," Military Review (July 1981), pp. 60-73 and Joseph J. Angsten, Jr., "Bypassed Enemy Forces and the Corps Attack," Military Review (January 1980), pp. 69-74 are representative.

[9]Paul Tiberi, "Encircled Forces: The Neglected Phenomenon of Warfare," US Army Command and General Staff College, MMAS Thesis (Fort Leavenworth, KS, 1985) and Rich Gutwald, "Tactical Encirclement Reductions," Fort Leavenworth School of Advanced Military Studies, MMAS Monograph (Fort Leavenworth, KS, 1986) are representative.

Chapter 3

METHODOLOGY & ORGANIZATION

The methodology of this paper is historical analysis and survey. Also addressed is the current "threat" approach to encirclement operations. A critique of the present U.S. artillery approach to supporting the destruction of an encircled enemy is included as well.

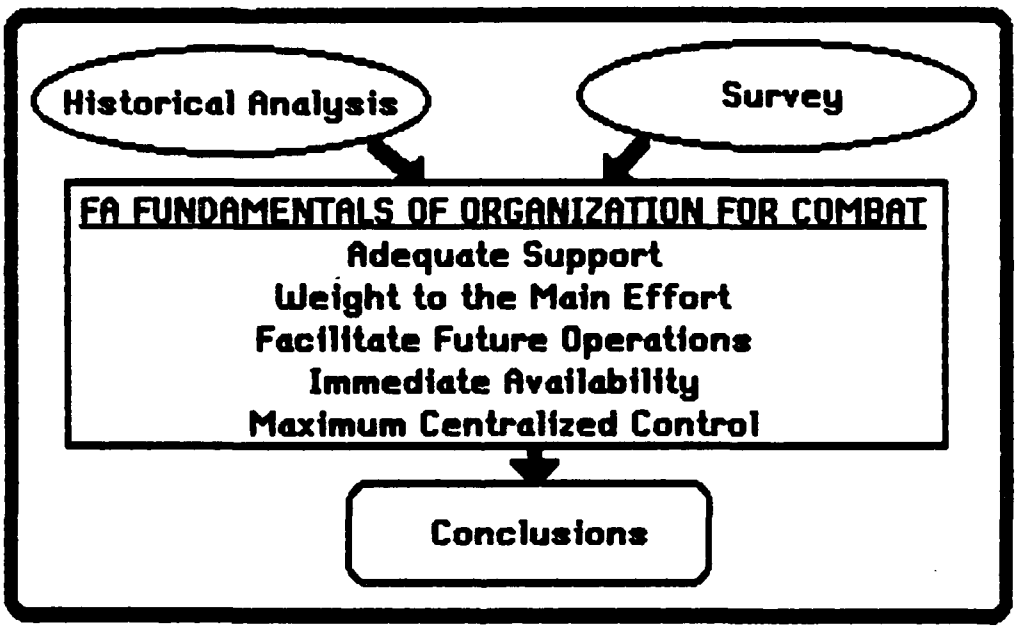

Figure 3-1 Methodology

HISTORICAL ANALYSIS

As Clausewitz said, "Historical examples clarify everything and also provide the best kind of proof in the empirical sciences."[1] Historical study can provide insights into the complexity of reducing an encircled enemy force including the benefits of success and penalties of failure. Two World

War II operations, a U.S. and a Soviet shown below in Figure 3-2, are reviewed in this paper.

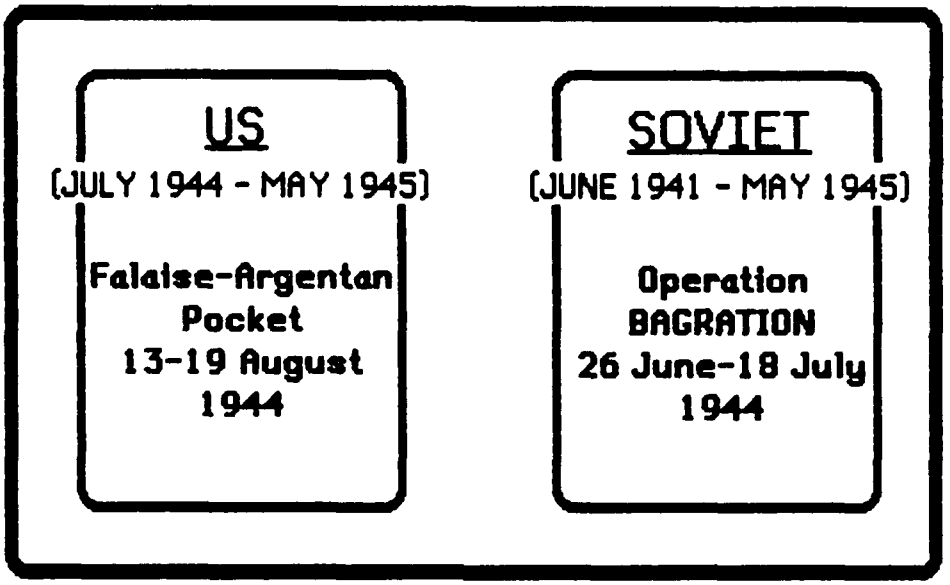

Figure 3-2 Historical Analysis

The allied attempt to encircle the German forces in central France in August 1944 resulted in what history calls the "Falaise-Argentan Gap." This is one of the limited number of U.S. experiences involving a large scale encirclement to operational depth during World War II. It achieved less than ideal results but points out several problems. Chapter 4 reviews this operation and examines specifically the aspect of fire support.

The Soviet Belorussian offensive in the Summer of 1944, Operation BAGRATION, encompasses the lessons learned by the Red Army over three years of fighting at the operational level. Here, the Soviet Red Army successfully executed a series of encirclement operations on a large scale. This operation is examined in Chapter 5.

The purpose chapters 4 and 5 is to analyze fire support task organization, coordination, and survivability, as well as the applicability of historical fire support lessons learned. The inherent responsibilities of field artillery missions are shown here in Figure 3-3.

AN FA UNIT WITH A MISSION OF --	DIRECT SUPPORT	REINFORCING	GENERAL SUPPORT REINFORCING	GENERAL SUPPORT
1. Answers calls for fire in priority from --	1. Supported unit 2. Own observers 3. Force FA HQ	1. Reinforced FA 2. Own observers 3. Force FA HQ	1. Force FA HQ 2. Reinforced unit 3. Own observers	1. Force FA HQ 2. Own observers
2. Has as its zone of fire --	Zone of action of supported unit	Zone of fire of reinforced FA	Zone of action of supported unit to include zone of fire of reinforced FA unit	Zone of action of supported unit
3. Furnishes fire support team (FIST/FSS)	Provides temporary replacements for casualty losses as required	No requirement	No requirement	No requirement
4. Furnishes liaison officer --	No requirement	To reinforced FA unit HQ	To reinforced FA unit HQ	No requirement
5. Establishes communications with --	Company/Battalion FSO's and supported maneuver unit HQ	Reinforced FA unit HQ	Reinforced FA unit HQ	No requirement
6. Is positioned by -	DS FA unit commander or as ordered by force FA HQ	Reinforced FA unit or as ordered by force FA HQ	Force FA HQ or reinforced FA unit if approved by force FA HQ	Force FA HQ
7. Has its fires planned by --	Develops own fire plans	Reinforced FA unit HQ	Force FA HQ	Force FA HQ

Figure 3-3 Inherent Responsibilities of Field Artillery Missions

CATEGORIES FOR ANALYSIS

The categories for analysis are the five basic principles used by the field artillery to provide responsive and effective fires and coordination of fire support for the maneuver commander's concept of operation.[2] These principles are:

Adequate fire support for committed combat units. One field artillery battalion in direct support of each committed maneuver brigade is considered the minimum adequate support. In no instance will more than one field artillery unit be in direct support of a given maneuver unit. The "direct support" tactical mission provides the most responsive field artillery support to committed maneuver units.

Weight to the main effort. The main effort is to the main attack in offense and the most vulnerable area in defense. Field artillery units can be oriented and positioned to concentrate their fires on a given zone or sector to add the necessary weight. The tactical missions of "reinforcing" or "general support reinforcing" provide additional responsive fires to maneuver units in contact. Ammunition may also be specially allocated to provide for more support in designated areas.

Facilitate future operations. In the face of unforeseen events, this principle is essential to ensure the smooth transition from one phase of an operation to another. Here, the assignment of on-order missions allows a unit to prepare for the anticipated changes needed to support future operations.

Immediately available fire support for the commander to influence the action. The force artillery commander should always retain some artillery with which he can influence the battle. Assigning "general support" and "general support reinforcing" missions ensures artillery units are responsive to the force commander.

Maximum feasible centralized control. Artillery is most effective when command and control of fires is centralized at the highest level consistent with the overall force capabilities, requirements, and mission. The optimum degree of centralized control and responsiveness will vary with the tactical situation and will probably change with each phase of an operation.

THE THREAT TODAY

Antoine Jomini asked, "How can any man say what he should do himself if he is ignorant of what his adversary is about?"[3] Soviet doctrine and training better prepare them to conduct successful encirclement operations. Analysis of current Soviet encirclement doctrine, tactics, techniques and procedures is the subject of Chapter 6.

THE SURVEY

There are several gaps between the "Army Doctrine" laid out in FM 100-5, Operations, and the tactics, techniques, and procedures practiced. As shown in Figure 3-4 below, the artillery commanders of **V** and **VII** Corps, the U.S. Army's forward deployed corps in Europe, were asked, via the questionnaire at Appendix A, how they are overcoming the lack of published field artillery doctrine, tactics, techniques, and procedures in their planning

and training for reduction of an encircled enemy. Their response is included in Chapter 7 as part of the discussion on the current state of U.S. artillery doctrine, tactics, techniques, and procedures applied to encirclement operations.

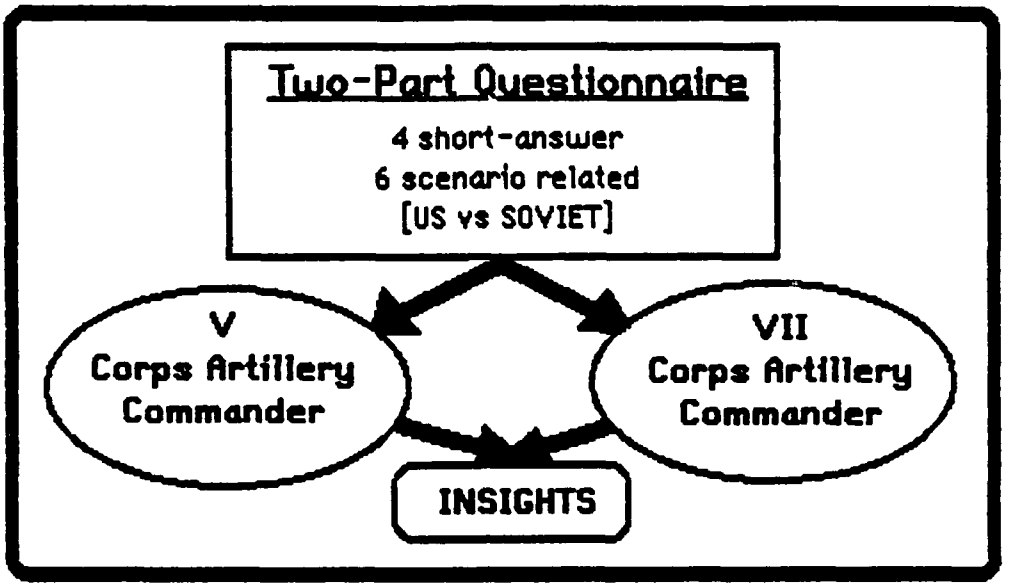

Figure 3-4 The Survey

U.S. FIELD ARTILLERY

"Doctrine is indispensable to an army. Doctrine provides a military organization with a common philosophy, a common purpose, and a unity of effort," said GEN George Decker in an address to CGSC students in 1966.[4] Additionally, doctrine provides a common language. Tactics, techniques, and procedures translate doctrine to action.

The commander must plan for extensive fire support throughout an encirclement operation. Maneuver units need massive coordinated fire power to protect them and to create gaps in enemy defenses. The fluid battlefield places a premium on maneuver and agility to ensure deep penetration into

the enemy's rear before he can react. Fire support becomes even more critical if reduction of an encircled enemy force becomes an economy of force mission while the attack continues against deeper objectives.

Concern about the lack of U.S. artillery doctrine, tactics, techniques, and procedures to support the reduction of an encirclement operation prompted this thesis. Conclusions and recommendations will be presented in Chapter 8.

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[1]Carl von Clausewitz, On War, edited and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), p. 170.

[2]FM 6-20, Fire Support in the AirLand Battle (Washington, DC: HQ Department of the Army, 1988), p 2-10.

[3]Antoine Henri Jomini, quoted in FM 6-20, Fire Support in Combined Arms Operations (Washington, DC: HQ Department of the Army, 1977), p. 2-2.

[4]GEN George H. Decker, in an address given to the U.S. Army CGSC, 16 DEC 1960, as quoted in Robert Debs Heinl, Jr., Dictionary of Military and Naval Quotations (Annapolis, Maryland: U.S. Naval Institute, 1966), p. 95.

Chapter 4

U.S. EXPERIENCE - THE FALAISE-ARGENTAN POCKET, AUGUST 1944

A broad front approach to the war in Europe was adopted by the Allies in 1944. Deep encirclement of large German units was not a part of the original operations planning. The unforeseen opportunity to encircle a large group of the German forces operating in Normandy presented the western Allies with one of their first experiences in deep operations.

REVIEW OF THE STRATEGIC AND OPERATIONAL SETTING

In June 1944, Allied forces established a foothold on the continent of Europe. The approximate strength of these forces by the end of August was twenty U.S. divisions, twelve British divisions, three Canadian divisions, and one each French and Polish divisions.[1]

On 25 July, the U.S. First Army launched Operation COBRA with the purpose of breaking through the German defenses to the Breton ports. After conducting the breakout from the Normandy beachhead, the Allied forces were reinforced with fresh troops--six U.S. divisions from England. Germany had no such strategic manpower reserves.

Supplying the attacking Allied divisions over ever increasing distances made logistics a paramount concern. A typical reinforced division consumed from 600-700 tons of supplies per day.[2] Cherbourg and the ingenious man-made port on the beach near Arromanches were the only operating facilities in Allied hands. Almost 600,000 tons of supplies were

put ashore from D-day to 2 July.[3] The Allies, however, because of limited roads and railways, were hampered in their ability to project these supplies forward. Somewhere, in the direction of Germany, existed a logistical limit or advance across which the Allied divisions would not be able to continue. Dealing with over extended supply lines became as great a concern to Eisenhower as attacking German resistance.

During planning for the liberation of Europe, it was determined that the initial lines of communications could satisfactorily support operations to the Seine River. It was expected to take weeks, maybe months, to beat the Germans back to that line. However, Hitler's decision to hold and then to counterattack at Mortain changed all this. On 31 July, an American spearhead broke through at Avranches, creating a gap through which General George Patton's newly created Third US Army quickly attacked. Hitler ordered the line strengthened and the attacking Americans cutoff at Avranches. The resulting German attack took place on 7 August but bogged down three days later west of Mortain. The Allies now saw the prospect of a rapid advance to the Seine over a matter of days instead of months. The question was whether needed supplies could be pushed out of the ports fast enough to keep up with the advancing divisions.

THE TACTICAL SITUATION

During the first week of August, General Omar Bradley, Commanding the newly formed 12th Army Group, realized the Allies were in a position to encircle the bulk of German forces operating in Normandy.[4] These forces were still concentrated around and east of Mortain. General Dwight Eisenhower, the Supreme Allied Commander, felt that "the chances for

delivering a knockout blow there were so favorable that, despite our need for the Brittany ports, I was unwilling to detach for their capture major forces from the main armies fighting in Normandy."[5]

As shown in Figure 4-1[6], General Bradley's forces moved south, then turned east toward Le Mans and Orleans. Field Marshall Bernard Montgomery led his 21st Army Group on to Caen, then proceeded south towards Falaise.

As Bradley swung his forces into the German rear, Eisenhower paused to reconsider his campaign plan. He had to determine what changes were needed to secure needed logistical ports. Two dominated his thoughts; Marseille, far in the south, and Antwerp. Marseille would be valuable to support the invasion of southern France scheduled to take place in a few weeks. Possession of Antwerp was particularly desirable now. Not only was it one of the most important ports in Europe, its location would reduce rail and truck haul distances to the Allied armies. Eisenhower felt confident that with Antwerp's facilities operating under Allied control, logistics would no longer limit his campaign in northern Germany.[7]

As the situation developed, Eisenhower initially envisioned conducting a deep encirclement to the Seine River. General Bradley, however, persuaded Eisenhower to agree to an immediate, more shallow, encirclement and ordered the diversion of U.S. forces north to Argentan, closing the gap to only 50 kilometers between his and Montgomery's forces.

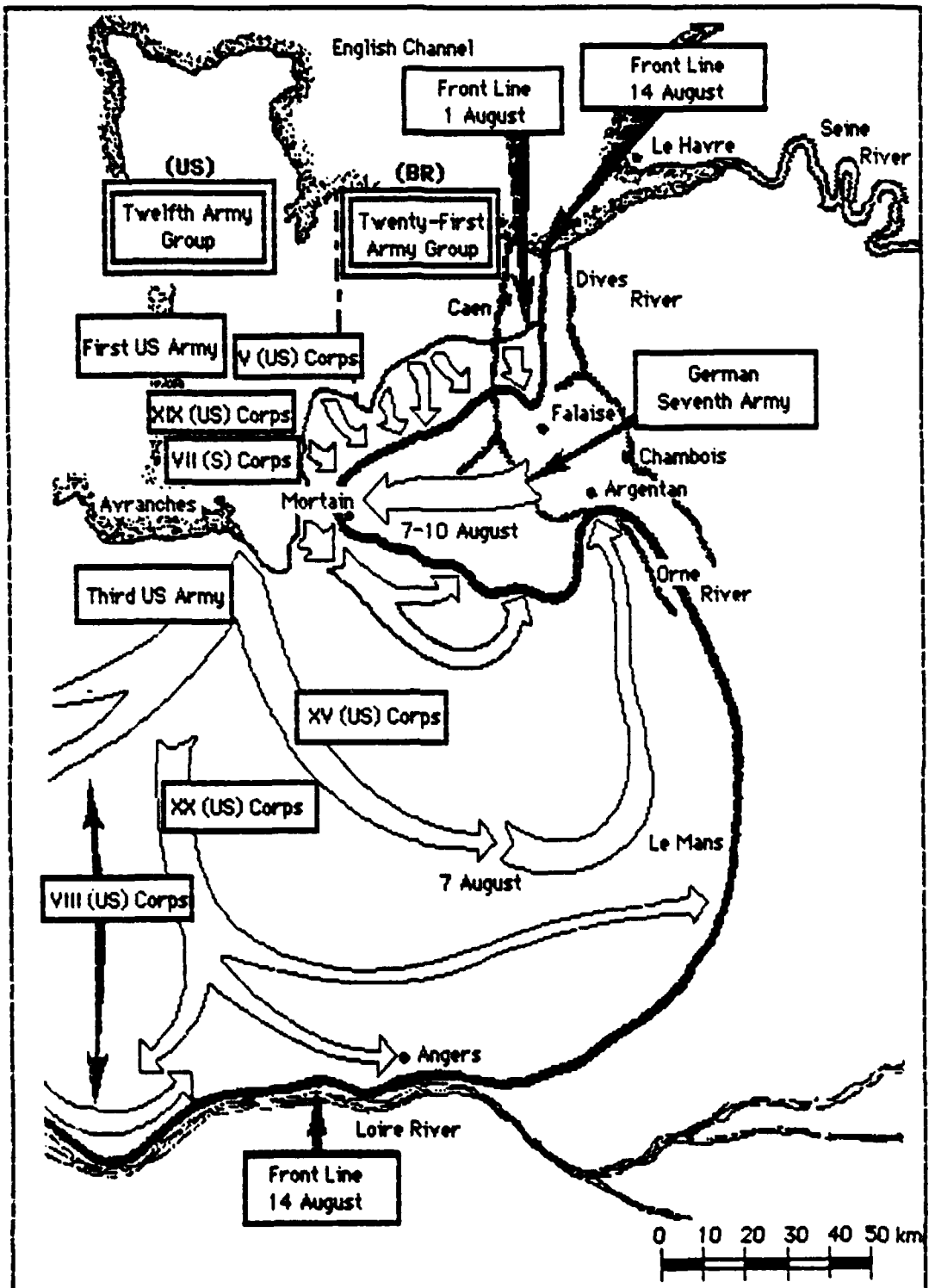

Figure 4-1 Falaise-Argentan Pocket

TERRAIN AND ITS IMPACT ON THE OPERATION

Hedgerows dominated the countryside, confining movement of armored forces mainly to roads.[8] Within what was to become the pocket, the Orne River, running roughly north-south, was an obstacle to mechanized movement. Less than ten miles east of the Falaise-Argentan road, the Dives River, also running roughly north-south, hindered eastward movement. The Orne River could be overwatched from the east, giving the encircling Allies the ability to fire upon any German forces going into or out of the pocket.

A belt of woods ran just east of Argentan along the ridge line from Falaise to Le Bourg-St-Leonard. This offered the retreating Germans good concealment and a staging area from which to attempt a breakout. However, the route out of the pocket was open and offered little concealment.[9]

THE ALLIED FORCES

Montgomery was the ground commander in Europe at this time. He personally commanded the 21st Army Group, made up of seven British divisions, four Canadian divisions, and one Polish division. Technically, he was Bradley's immediate superior. Bradley's 12th Army Group consisted of one French and ten U.S. divisions. These forces were disposed on 14 August as shown in Figure 4-1.

The planned employment of corps in Europe recognized the need for flexibility. To this end, it had been decided to attach a like quantity of artillery to each corps. The Field Artillery Annex to the Third US Army COBRA plan recommended attachment to each corps the following:[10]

1 - Corps Artillery Headquarters
1 - Field Artillery Observation Battalion
4 - Field Artillery Group Headquarters
5 - 105mm howitzer Field Artillery Battalions
2 - 4.5" gun Field Artillery Battalions
5 - 155mm howitzer Field Artillery Battalions
3 - 155mm gun Field Artillery Battalions
2 - 8" howitzer Field Artillery Battalions

In addition, it was planned to retain two field artillery brigades directly under Army control, consisting of the following:[11]

4 - Field Artillery Group Headquarters
3 - 8" gun Field Artillery Battalions
7 - 240mm howitzer Field Artillery Battalions
4 - 105mm howitzer Field Artillery Battalions

Most, but not all these battalions, were deployed in Europe in August 1944. Available artillery was allocated by this plan whenever possible.

THE GERMAN FORCES

German Army Group 'B', under the command of Field Marshall Rommel, was the target of the Allied encirclement. Included was the German Fifth Panzer and Seventh Armies; 13 Infantry, 1 Parachute, and 7 Armored divisions. It's mission in 1944 was the defense of France. During the two months following the Allied invasion, the strength of Army Group 'B' declined significantly. By 14 August they had lost over 157,000 men. The Allies lost nearly 180,000 men during the same period. But, these were all replaced by fresh troops while Germans replacements numbered only 30,000.[12]

On 17 July, Rommel was wounded during an air attack while conducting an inspection at the front. Hitler named Field Marshal Gunther von Kluge to take over the command.[13]

DESCRIPTION OF THE ACTION

In assessing the threat on 13 August, Bradley felt uneasy about the Third US Army's **XV** Corps advancing further than Argentan after turning north. Patton's advanced guard was already half way to Falaise from Argentan. Noting that both his flanks were exposed and worried about a coordinated link-up with the forces from the north, Bradley ordered Patton to pull the **XV** Corps back to Argentan and await the arrival of Montgomery's forces.

Much debate has taken place on the wisdom of this order. There is no doubt that Montgomery understood his part in the operation, but he proceeded at his characteristically slow, cautious, pace. American intelligence did not learn until later that General Eberbach had been given the mission to launch a massive attack westward from within the pocket against the **XV** Corps' left flank.[14] This attack, however, never fully materialized. Unfortunately, with the Americans halted in Argentan, a gap of over forty kilometers remained between the Allied forces. Through this gap, most of the men of the Fifth Panzer Army, Seventh Army, and Panzer Group Eberbach would escape.

In ordering **XV** corps to pull back to Argentan, Bradley was also considering intelligence estimates which stated the bulk of the German forces had already escaped.[15] He began to think about having to extend his net all the way to the Seine River to surround Army Group 'B'. These reports

turned out to be false. This distorted estimate of the enemy contributed markedly to the difficulty encountered in trying to close the gap on the 17th.

At this point in the battle, Hitler insisted that Kluge continue attacking west to Avranches to split the two Allied army groups. Repeatedly, he refused permission to withdraw any forces from the pocket.

Believing most of the encircled Germans had escaped and were racing for the Seine, Bradley decided on 14 August to shift some of his forces east from Argentan. The 79th Infantry Division and the 5th Armored Division hunted down and destroyed about fifty escaping German tracked vehicles as they attacked toward Dreux on the 15th. They were followed by the **XV** Corps headquarters and most of its artillery. Hence, of the four divisions and twenty-two battalions of artillery that had been in the vicinity of Argentan on the 14th, there were only two divisions and seven battalions of artillery in position when the Germans began their actual withdrawal two days later.[16]

On the 14th, Bradley had halted the push to close the Falaise-Argentan gap for three reasons; he felt **XV** Corps did not have sufficient forces in the area to secure their flanks, he was concerned about a coordinated link-up between two moving forces, and he thought most of the Germans had already escaped. The next day , as he depleted the strength of **XV** Corps around Argentan in order to shift more forces east, the gap remained. Most of Army Group 'B' was still inside the pocket. By the time he realized the true state of affairs, it was too late.

Bradley's abrupt shift to a long envelopment to the Seine left the forces around Argentan without a corps headquarters to direct their efforts. Patton formed a provisional corps under his chief of staff, General Gaffey. Gaffey quickly took charge of the situation and issued orders to attack north at 1000 hours the next day, 17 August. Unaware of Patton's actions, Bradley ordered General Gerow and the **V** Corps headquarters moved to the scene. Gerow recounts the night of 16-17 August:

> "We proceeded to [First] Army as rapidly as we could go. I was told that I was to take command of three divisions and that I was to proceed to close the pocket. I asked, "Where are these Divisions?" and was told, "We do not know, you will have to locate them." I then asked about the enemy situation and was again told by the staff of the First Army that they knew nothing of the enemy situation. We left the conference in the middle of the night and drove on. It was raining like hell."[17]

Arriving at the 90th Division, Gerow found Gaffey in a make-shift corps command post. Once it was settled that Gerow was in charge, he reviewed, then withheld Gaffey's attack order while developing his own. This caused yet another delay.

On 16 August, Hitler finally approved Kluge's request to withdraw through the gap. German units began to pull out immediately after dark.

On 17 August, **VII** Corps made contact with British troops. The gap, however, remained open.

Hitler relieved Kluge of his command on 18 August and replaced him with Field Marshal Model. Kluge was ordered to report immediately to the Fuhrer. Knowing Hitler now questioned his loyalty, Kluge committed suicide en route to Berlin.

Finally, on 19 August, the gap was closed at Chambois, east of the Dives River. Most of the Germans within the pocket on 14 August had been compressed and squeezed out of the gap between Falaise and Argentan before 19 August. Those remaining behind were badly battered and soon surrendered. The reduction, in effect, took place before completion of the encirclement itself. The Germans did try to break out, but their efforts were generally unsuccessful. The artillery and tank destroyers of First US Army were extremely active. V Corps reported its artillery and tank destroyers smashed thirty-five tanks, eight armored vehicles, nine antitank guns, and forty-odd other vehicles on 20 August.[18]

FIRE SUPPORT

Adequate fire support for committed combat units. Today's doctrine calls for this to be accomplished in the attack by assigning a preponderance of decentralized artillery tactical missions ("direct support" and "reinforcing") to the main attacking force.[19] The equivalent of one field artillery battalion was placed in direct support of each committed U.S. brigade. This is the same minimum support requirements recommended today

Weight to the main effort. Initially, the main effort was forming the encirclement. Close air support and heavy bombers were used extensively. On 7-8 August, 1,500 heavy bombers of the Eighth Air Force laid a carpet in front of the Canadian attack south from Caen. Similar saturation bombing was used on 14-15 August aiding Canadian forces to finally occupy Falaise.[20] While XV Corps was spearheading Patton's drive

north to close the pocket, over twenty battalions of artillery fired in support of his four attacking divisions.

Facilitate future operations. In the face of unforeseen events, units must begin planning for anticipated future operations. On 14 August, Bradley decided to shift from his short envelopment along the Falaise-Argentan road to a long envelopment all the way to the Seine River. His information, which proved incorrect, was that the main body of the German forces had already escaped and were bolting east. He sent all but seven of the twenty-two battalions of artillery racing east with two divisions to cut off the Germans.

The 2nd French Armored Division, the 80th Infantry Division (less the 319th Infantry), and the 90th Infantry Division were detached from Third US Army and attached to First US Army on 17 August to aid in squeezing tighter the gap from Falaise to Argentan. Their attached **XV** Corps Artillery units stayed with them. Still, this left them with only minimal artillery assets to support future operations while under the confused command and control picture describe by Gerow

Immediately available fire support for the commander to influence the action. Throughout the operation, control of all artillery within **XV** Corps was decentralized down to division level.[21] This gave subordinate commanders control over the support they needed to continue with the attack.

Extensive use was made of close air support by Bradley and his army commanders throughout the operation. Mustangs and Thunderbolts, specially modified and used to carry small bombs, added their punch to that

of the medium and heavy bombers runs. The Allies enjoyed virtual air superiority. German aircraft were only able to launch limited attacks from fields north of the Seine River. Sealing the pocket shut and reducing the trapped German units remained a priority mission for the **XIX** Tactical Air Command. On 17 August they reported that "friendly aircraft were so numerous over the Falaise-Argentan pocket that they had to wait their turn to attack enemy tanks and motor transport therein."[22]

Maximum feasible centralized control. When ordered to halt at Argentan, most **XV** Corps' artillery came under centralized control. As the Germans began their withdrawal the night of 16 August, the pocket was roughly 130 kilometers long and eighteen to twenty-five kilometers wide.[23] This placed most of the ground inside the pocket within range of Allied artillery. The narrow gap through which the Germans squeezed turned into one of the greatest "killing grounds" in the war. Forty-eight hours after the gap was closed, Eisenhower was escorted through the area on foot. His own words best describe the hellish scene:

> "Roads, highways, and fields were so choked with destroyed equipment and dead men that passage ... was extremely difficult. It was literally possible to walk for hundreds of yards at a time, stepping on nothing but dead and decaying flesh."[24]

THE OUTCOME

Sources refer to this episode in history alternately as the Falaise-Argentan gap and the Falaise-Argentan pocket. References using the term "pocket" usually take an uplifted approach to the subject, emphasizing the positive aspects of the operation. Those who seem to take pleasure in

pointing out nothing but the missed opportunities, most frequently seem to favor the term "gap." I chose to use the term "pocket" for this chapter to emphasize the floating pocket approach to reducing an encircled enemy. If we allow a pocket of encircled enemy forces the freedom to move, or float, about the battlefield, we can attack his flanks and defeat him by pieces. In this operation, the German forces were not overcome by a deliberate reduction following a completed encirclement. They were destroyed while they were moving, trying to escape the forming encirclement. Although a large number did escape, they were forced to abandon most of their arms and equipment.[25] The Allies did not know for sure how many prisoners they captured. From 13-17 August they made accurate counts. After 17 August, however, all figures were reported as approximations. German casualties estimates cite 50,000 captured and 10,000 killed while from 20,000 to 40,000 escaped. Essentially all equipment in the two German Armies was lost.[26]

In his book Death of a Nazi Army, William Breuer vividly describes the devastating effects of fires poured into the pocket.

> "Those [Germans] snared in the final act in the Argentan-Falaise gap were a sorry lot. Pounded for days and nights from the air and by artillery, they shuffled into prisoner of war cages in long, undisciplined columns, dust-covered, bedraggled, past caring. Men drooped with fatigue, eyes red-rimmed, glassy, and unseeing. Blood oozed from mouths, ears, and noses."[27]

Hitler's armies in France had taken a terrible beating from which they would never fully recover. The lack of a formal mass surrender differentiates this operation clearly from the encirclement operations being successfully executed on the Russian front and later in the Ruhr by the

Allies in April 1945. Of the German higher staffs, only the LXXXIV Corps headquarters was lost.[28] Although many commanders were wounded, they escaped through the Falaise-Argentan gap. So, too, did a large number of German troops

SIGNIFICANCE OF THE ACTION

The greatest dramatic result of the failure to quickly close the Falaise-Argentan gap was a prolonging of the war in Europe. Even Hitler's Propaganda Minister Goebbels would have been unable to lessen the impact on the German home front had Army Group 'B' been totally destroyed. With the commanders, staffs, and soldiers of Army Group 'B' gone, we would not have had to fight the Battle of the Bulge four months later.

Still, this was a good example of a large coalition operation and offers some valuable lessons still applicable today. Of no little impact was Eisenhower's distance from the action and his dependence upon messages in keeping abreast of the situation. Montgomery, the overall ground commander, wrapped up in commanding the 21st Army Group, never assumed an active role in the overall operation. With no forward located central command and control center, the coordination of timely artillery and air support was difficult.

Allied commanders, especially Bradley, realized the advantage of their air superiority They were, however, very sensitive to the effects of friendly casualties caused by Allied bombing.[29] The opening day of Bradley's COBRA operation a few weeks earlier was marred when ninety percent of the bombs dropped in front of the U.S. 30th Division fell short, landing on friendly soldiers. VII Corps suffered 601 casualties on that morning,

including the former chief of the Army Ground Forces in Washington, LTG Lesley McNair.[30]

Bradley's decision to shift most of XV Corps' artillery to the east on 14 August was necessary to give the exploiting maneuver commanders needed fire support. In hindsight, it appears this shift was premature. One can only guess how the outcome would had differed had the XV Corps artillery remained in place under centralized control through the closing of the pocket and the reduction of the encircled forces.

LESSONS LEARNED

Before World War II, FM 6-20, Field Artillery Field Manual: Tactics and Technique, devoted only a few words to the use of artillery in encirclement-like operations when it stated that:

> "In an envelopment, the bulk of the artillery supports the main attack and definite assignments of artillery units to support each attack are made. The location of the artillery should be such that, in the event the holding force is seriously threatened, the artillery will be able to support it."[31]

By 1944 the employment of artillery with an encircling force was specifically addressed. The need for decentralized concentration of artillery assets and the affect of its combat service support is reflected in this passage from FM 6-20 of that year:

> "Artillery with an encircling force is nearly always attached...[T]he units that are least actively engaged are selected. The supply of ammunition and fuel to the encircling force artillery must receive major consideration."[32]

This attention to artillery during an encirclement has completely disappeared in our manuals today. Lessons which should be learned from this historical example are discussed and summarized in Figure 4-2 below

- **Artillery organization for combat and its combat service support need special consideration.**
- **An accurate picture of the encircled enemy is required to plan the reduction.**
- **Established fire support coordination measures which deal with converging units and boundaries are required.**
- **An artillery commander is needed at echelons above corps.**

Figure 4-2 U.S. Lessons Learned

Eisenhower and Montgomery both initially considered conducting a much deeper encirclement to the Seine River. It was Bradley that succeeded in convincing his seniors that a shallow drive executed quickly held greater promise of success. The fierce fighting of the defending Germans notwithstanding, the fear of overrunning their objectives and firing into friendly units slowed the closing of the gap between 21st Army Group in the north and 12th Army Group in the south.

On 14 August, Bradley erroneously believed most of Army Group 'B' had escaped through the gap between Falaise and Argentan and was racing

for the Seine. In executing a wider sweep to the Seine, rapidly advancing forces from 21st Army Group and 12th Army Group were again forced to halt prematurely. The fear of driving too far, overrunning their objectives, and firing into each other remained.

It was in part this fear of fratricide that caused General Bradley to pull back his forces to Argentan.[33] Later, General Bradley offered the suggestion that on future operations a "distinctive terrain feature or conspicuous landmark" be used to identify where the fires of the converging forces would end.[34] This is exactly the purpose of the "restrictive fire line" today. A "restrictive fire line" is defined in FM 101-5-1, Operational Terms and Symbols, as "a line established between converging friendly forces (one or both may be moving) that prohibits fires or effects from fires across the line without coordination with the affected force. It is established by the commander of the converging forces" which would have been Montgomery here.[35] A distinctive linear terrain feature easily recognized on the ground, such as a road, river, or ridge line, is recommended.

Though some larger caliber, longer ranging battalions were attached to FA brigades at army level for interdiction and destruction missions, no artillery commander was authorized at army or army group level. Hence, fire planning done at these headquarters was seldom directive. This did not prevent the Field Artillery Section of 12th Army Group from executing vital coordination, liaison, and logistical planning. Representatives from these sections informally coordinated the restrictive fire measures between the converging forces, easing somewhat the army commanders' fears of self-inflicted friendly casualties. The officers of this section were also influential in arbitrating a disagreement between First and Third Armies

over the assignment of reinforcing artillery in the final days of August. Despite the inability to order regrouping or inter-army movement of large numbers of nondivisional artillery units to support the campaign plan, the timely recommendations of this section did much to smooth the administrative and coordination headaches without burdening the already taxed resources of subordinate artillery units.[36] However, the presence of an artillery commander with directive authority could have been more effective.

There is little argument that the missed opportunity to destroy Army Group 'B' during this operation resulted in a prolonging of the war. The artillery commander is directly responsible for supporting the ground commander"s scheme of maneuver. He may not be responsible for the accuracy of combat intelligence or the intelligence preparation of the battlefield (IPB), but an accurate picture of the enemy situation is required to plan for a reduction effort. He must be able to step forward with suggestions and recommendation to the maneuver commander on how to best employ fire support assets in the accomplishment of the mission.

Better documented fire support coordination procedures would have eased Bradley's fear of fratricide which contributed to his decision to abort Patton's drive to Falaise as the British and Canadian forces fought their way south. Such procedures would also have hastened the linking of Allied forces which eventually occurred east of the Dives River. The organization for combat of the artillery also fell victim to spontaneous origins of this operation. Forced to reorganize on the fly , the artillery failed to fully consider some of the most basic principles for supporting the maneuver commander.

It is encouraging to review such operations as the Ruhr encirclement which occurred later in the war. Many of the shortfalls which surfaced in the Falaise-Argentan pocket were anticipated and planned for accordingly. The result was a much more orderly and successful operation. Unfortunately, while some of the same problems the Army has faced since the perfection of indirect fire continue to plague us today, many of the lessons learned during the limited number of large-scaled encirclement operations conducted by the Allies in World War II are missing from the body of knowledge contained in the current family of manuals. How should we deal with converging unit boundaries such as occur during encirclement operations? What are the rules of thumb in organizing for combat in such an operation? Who commands the artillery at echelons above corps? These are questions which surfaced in World War II, were dealt with in one form or another, but are completely absent from todays doctrine, tactics, and techniques

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[1]Dwight D. Eisenhower, Crusade in Europe (New York: Da Capo Press, Inc), 1977, p. 289.

[2]Ibid., p. 290.

[3]Ibid., p. 270.

[4]Martin Blumenson, United States Army in World War II, The European Theater of Operations: Breakout and Pursuit (Washington, DC: Center of Military History), 1984, p. 492.

[5]Dwight D. Eisenhower, Report by the Supreme Commander to the Combined Chiefs of Staff on the Operations of the Allied Expeditionary Force, 6 June 1944 to 8 May 1945 (Washington, DC: U.S. Government Printing Office), 13 July 1945, p. 42.

[6]Cole C. Kingseed, "The Falaise-Argentan Encirclement: Operationally Brilliant, Tactically Flawed," Military Review (December 1984), p. 7.

[7]Eisenhower, Crusade, pp. 291-292.

[8]The Americans, however, improvised a means for busting through the hedgerows, creating what became known as a Rhino-tank by welding heavy steel tusk-like prongs to the front of a Sherman tank. This gave them the ability to mount flanking movements against the Germans. [Russell F. Weigley, Eisenhower's Lieutenants (Bloomington: Indiana University Press), 1981, p. 219.]

[9]Blumenson, p. 525.

[10]After Action Report, Third US Army, 1 August 1944 - 9 May 1945, Volume II, Staff Section Reports, Part 9, Artillery. [Available in Combined Arms Research Library (CARL), Fort Leavenworth, KS]

[11]Ibid.

[12]Blumenson, p. 516.

[13]Russell F. Weigley, Eisenhower's Lieutenants (Bloomington: Indiana University Press), 1981, p. 218.

[14]Blumenson, p. 507.

[15]Ibid., p. 509.

[16]Ibid., p. 527.

[17]Weigley, p. 310.

[18]Elbridge Colby, The First Army in Europe (Washington, DC: US Government Printing Office), 1969, p. 81.

[19]FM 6-20-30, Fire Support at Corps and Division (Coordinating Draft) (Fort Sill, OK: U.S. Army Field Artillery School, 1 March 1988), p. 4-5.

[20]Eisenhower, Report by the Supreme Commander, p. 43.

[21]After Action Report, Third US Army, 1 August 1944 - 9 May 1945, Volume II, Staff Section Reports, Part 9, Artillery. [Available in Combined Arms Research Library (CARL), Fort Leavenworth, KS]

[22]Ibid., Volume I, p. 34.

[23]Blumenson, p. 507.

[24]Eisenhower, Crusade, p. 279.

[25]B. H. Liddell Hart, History of the Second World War (New York. G. P. Putnam's Sons, 1970), p 552.

[26]Blumenson, pp. 557-558.

[27]William B. Breuer, Death of a Nazi Army: The Falaise Pocket (New York: Stein and Day, 1985), p. 294.

[28]Blumenson, p. 557.

[29]Weigley, pp. 221-226.

[30]Breuer, p. 66.

[31]FM 6-20, Field Artillery Field Manual: Tactics and Technique (Washington, DC: HQ Department of War, 1940), p. 128.

[32]FM 6-20, Field Artillery Field Manual: Tactics and Technique (Washington, DC: HQ Department of War, 1944), p. 48.

[33]Blumenson, p. 506.

[34]Ibid.

[35]FM 101-5-1, Operational Terms and Symbols (Washington, DC: HQ Department of the Army, 1985), p. 1-62.

[36]Mark P. Gay, "The Field Artillery in Support of Deep Offensive Missions," MMAS Thesis (Fort Leavenworth, KS, 1985), pp 98-99

Chapter 5

THE SOVIET CONTRAST - OPERATION BAGRATION
THE BELORUSSIAN OFFENSIVE, SUMMER 1944

It was during the Tehran Conference, convened at the end of November 1943, that Stalin finally got a firm commitment from the western allies that they would launch the long awaited cross-channel attack, Operation OVERLORD, the following year. Stalin promised a simultaneous offensive to focus Germany's attention to the east, away from the Normandy beaches. It worked. Hitler soon abandoned the position he had taken in his 3 November 1943 Directive #51; stating he now clearly considered the most dangerous threat to Germany lay to the east.[1]

REVIEW OF STRATEGIC AND OPERATIONAL SETTING

In the Spring of 1944, the German attempt to conquer Russia was in its third year. Early in the summer of 1941 German forces had looked east and launched what they expected to be a lightening blow resulting in the quick defeat of the Soviet Union. By December of that year, the German Army had reached Leningrad and Moscow. Yet, despite incredible losses, the Soviets continued to fight back.

Following setbacks in the winter of 1941-42, the Germans launched another offensive in the summer and fall of 1942. They pushed deep into the Caucasus and drove as far as Stalingrad. There, they were again stopped by the Russian's dogged resistance.

The Germans suffered their first major defeat of the war in January 1943, when their 6th Army, consisting of over twenty divisions, was destroyed at Stalingrad. This shook the German people and showed the world that the Wehrmacht could be defeated. The tide of the war had turned.

During the summer of 1943 the German Army again took up the offense, but with little success. By summer's end the Red Army had wrested the initiative from the Wehrmacht. The eastern German armies surrendered themselves to the reality of waiting for the Soviets to make the next move.

THE TACTICAL SITUATION

By mid-May 1944, Germany's Army Group Center had managed to bring the Soviet spring offensive to a halt. The resulting front stretched over 1,100 kilometers in length with its center bulging out deeply to the east (see Figure 5-1[2]). The German positions included large sectors unfavorable to the defence and offering little opportunity for use of natural obstacles. This translated into a requirement for large numbers of troops. German headquarters concerned themselves primarily with where the Red Army would re-open its offensive. Army Group Center's estimates were vague. It believed it was facing between 83 and 106 rifle divisions and 400-1650 tanks.[3]

SOVIET DOCTRINE IN EFFECT

The 1943 Red Army Field Regulations spell out specific instructions for dealing with the destruction of an encircled enemy. The focus of these efforts, it states, "is the successive splitting of his units to compress small encircled groups in a cramped space and bring them under withering

machinegun and mortar cross fire."[4] This battle of encirclement is concluded only "with the enemy's capture or total annihilation." It is achieved by, among other actions, "neutralization and isolation of the troops being encircled with mortar and artillery fire and air strikes."[5]

If an encircled enemy succeeds in establishing an organized defense, his annihilation is achieved by a carefully prepared offensive.[6] Attacks are made by concentrated forces using tanks and strong artillery. These attacks split the enemy formations into smaller pieces and annihilate him one piece at a time. Disruption of the enemy's air lines of communication, as well, is a mission of ground troops, especially artillery.[7]

Specific missions assigned to the artillery in this 1943 manual include; demolition of defensive works, destruction of enemy batteries, creation of passages in antitank and antipersonnel obstacles, and the delay and disruption of operations within the encirclement.[8]

THE SOVIET MILITARY OBJECTIVE

The strategic objectives set forth by the Soviet High Command for Operation BAGRATION were the liberation of Belorussia and advancement to the Vistual and the border of East Prussia.[9]

SOVIET LEADERS

Two of the premier Soviet army leaders, Field Marshals Zhukov and Vasilevsky, were directed to plan the operation. Georgi Zhukov had been Chief of the General Staff of the Red Army at the beginning of the war and Alexander Vasilevsky had been one of his deputies. It was decided that

Vasilevsky would control the 1st Baltic and 3rd Belorussian Fronts in the north. Zhukov would control the 1st and 2nd Belorussian Fronts in the south.

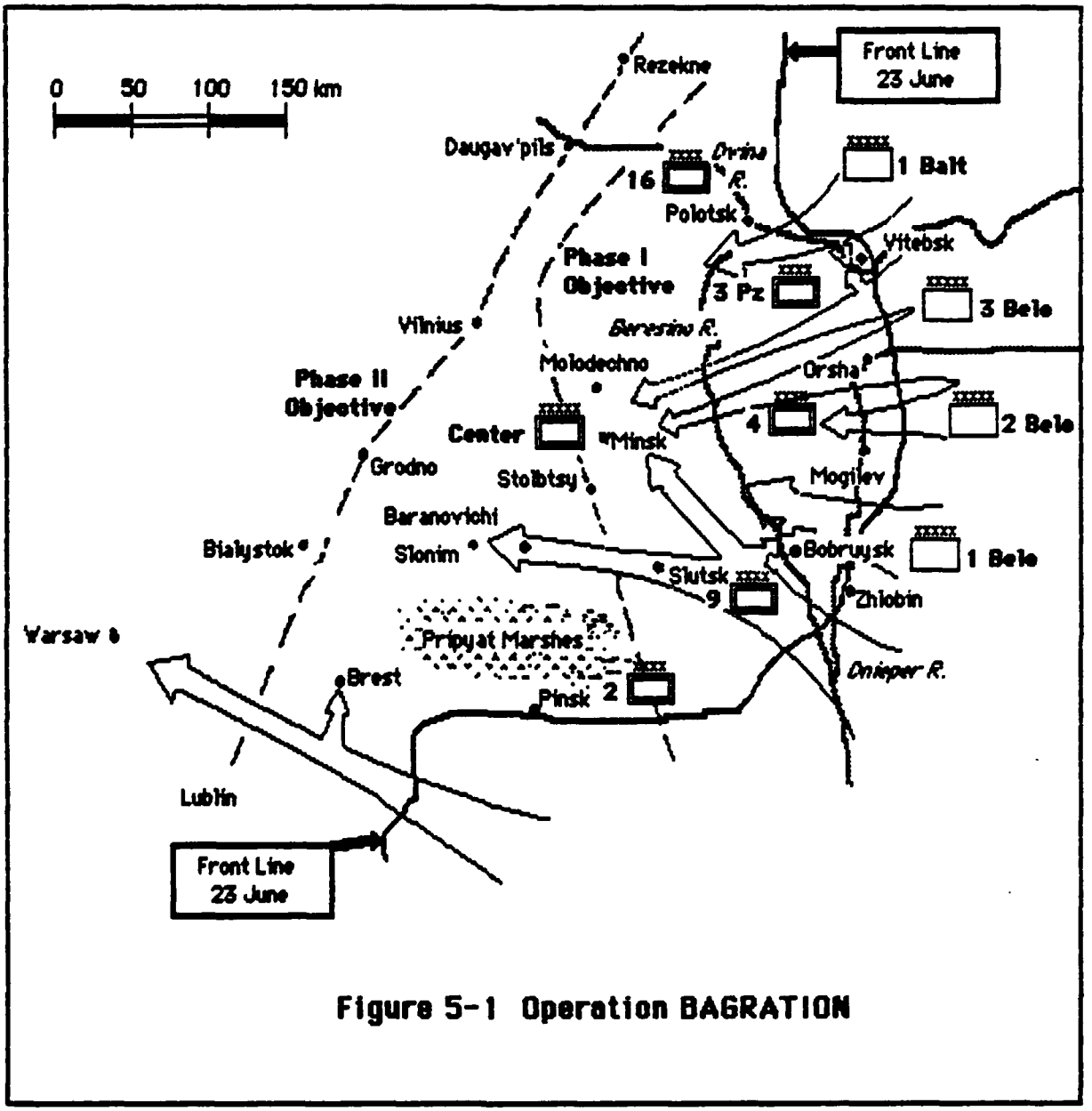

Figure 5-1 Operation BAGRATION

SOVIET PLANS

The first phase of the Soviet plan called for the encirclement and destruction of German strongpoints and communication hubs in Vitebsk by the 1st Baltic and 3rd Belorussian Fronts and in Bobruysk, 300 miles to the

south by, the 1st Belorussian Front. Next, the two forces would converge on Minsk with strong columns driving west, cutting off enemy escape routes.

Directive #1, signed by Stalin on 31 May, issued these missions.[10]

Group "A" - under supervision of Field Marshal Vasilevsky.

1st Baltic Front - commanded by General Bagramian and supported by 3rd Air Army - totalling 8 rifle corps, 24 rifle divisions - was to destroy the northern parts of 3 Pz Army, cut communications between the German Army Groups North and Center, and screen the northern flank. Specifically, the Front was to:

- force a break through between Vitebsk and Polotsk,

- speedily cross the Dvina River and swing its left south to encircle Vitebsk in concert with the 3rd Belorussian Front,

- attack in force across the Ulla River to gain control of the area Chashniki-Lepel-Kamen and to screen off Polotsk.

3rd Belorussian Front - commanded by General Chernyakovsky and supported by 1st Air Army - totalling 11 rifle corps, 33 rifle divisions - was to destroy the Germans between Vitebsk and Orsha, then drive on to Minsk. Specifically, it was to:

- force a break through south of Vitebsk,

- swing its right north to destroy German forces in Vitebsk in concert with the 1st Baltic Front,

- continue to drive through Borisov to Minsk,

- envelop and destroy the German forces east of Minsk with the 1st Belorussian Front.

Group "B" - under supervision of Field Marshal Zhukov.

2nd Belorussian Front - totalling 7 rifle corps, 22 rifle divisions - commanded by General Zakharov and supported by 4th Air Army - was to attack straight toward Mogilev. After liberating the city it was to launch a frontal pursuit towards Minsk, holding the nose of the retreating Germans.

1st Belorussian Front - totalling 13 rifle corps, 39 rifle divisions - commanded by General Rokossovsky and supported by 16th Air Army - spanned nearly twice as wide an area as the other fronts in the operation. Its left, in an economy of force, was to hold the southern shoulder of the salient in place. Its right was to break through at Bobruysk and drive onto Minsk. Specifically, it was to:

- break through north of Rogachev and south of Parichi with one shock group on each axis,

- encircle Bobruysk and destroy German forces in place,

- continue to advance, encircle and destroy German forces east of Minsk in concert with the 3rd Belorussian Front.

GERMAN COMBAT INTELLIGENCE

The Eastern Intelligence Branch of the German High Command considered the possibility of a deep Soviet strike through Army Groups North Ukraine and Center to the Baltic coast. They felt, however, it would require such a high degree of tactical proficiency that the Soviet High Command would not risk it. They pronounced instead that the major threat was south of the Pripyat Marshes.[11]

GERMAN DOCTRINE AND TRAINING

The Germans were the first to marry the flying artillery capability of a modern air arm with the speed of attacking tank and mechanized forces.[12] They were very practiced in the decentralized control of fire support this called for. In a defense, centralized control of fire support is needed, something the Germans had not practiced.

The Germans had been successful in their blitz attacks through Western Europe due in part to the shallow linear nature of the defenses encountered. It was not until the Germans turned east and faced the in-

depth belted Soviet defenses that they were first stopped. Quick to realize the strengths of this tactic, the Germans tried to adopt it themselves at the close of 1943.

THE GERMAN MILITARY OBJECTIVE

Army Group Center, headquartered in Minsk, accepted the Eastern Intelligence Branch estimate. They quickly recognized the wisdom of eliminating the large east-pointing salient north of Pinsk to reduce their frontage and economize forces to create a mobile reserve. This would mean pulling back the German lines by leapfrogging forces to form a stronger, shorter front.[13]

On 20 May, Field Marshal Busch, Commander-in-Chief of Army Group Center, briefed Hitler on the situation and presented his proposed course of action. Hitler refused to accept any plans which called for the Wehrmacht yielding a single foot of ground and branded Busch as "yet another of those generals who spend their time looking over their shoulder."[14] He reacted by immediately ordering the fortification of several towns and cities along the salient including Vitebsk, Orsha, Mogilev, and Bobruysk. These strong points were specifically ordered not to surrender under any circumstances. This accounts in part for the eventual near total destruction of their garrisoned forces.[15]

On 24 May, Busch conveyed to his subordinate commanders Hitler's unquestionable resolve to hold the existing line at all costs. He announced that he would not again request permission to pull back and called for all available effort to be put into the fight.[16]

That same day, Hitler granted a request made five days earlier by Field Marshal Model, commander of Army Group North Ukraine. Expecting events north of the Pripyat Marshes to remain quiet, Model had suggested that the **LVI** Panzer Corps be given to him to form the core of a force with which he could strike the Russians before they could kick off their offensive. The **LVI** Panzer Corps included six divisions, two of these being panzer divisions.[17] In granting this request, Hitler stripped away over 80% of Army Group Center's tanks and 50% of its artillery[18] and gave them to Model.

DISPOSITION OF FORCES

During May, while the Germans were concentrating their attention to the area south of the Pripyat Marshes, the Soviets began to build up their forces opposite Army Group Center. Over the next six weeks the 1st Baltic and the 1st, 2nd, and 3rd Belorussian Fronts received more troops, tanks, artillery and supplies. Over 75,000 railroad carloads of troops, supplies, and ammunition were dispatched in the first three weeks of June. The Soviet combat troops from west of Vitebsk to south of Bobruysk numbered 1.2 million against the 700,000 Germans. Russian reserves, initially held back, would bring the number of Soviet forces to more than 2.5 million. In addition, with 4,000 tanks, over 24,000 artillery pieces, and 5,300 aircraft, the Soviets had better than a 10:1 initial advantage in all areas.[19]

CHRONOLOGY OF EVENTS

Phase I

The Vitebsk Breakthrough. The 1st Baltic and 3rd Belorussian Fronts attacked the morning of 23 June following massive artillery and air preparations. By the end of the day the advanced assault groups of the 1st Baltic Front had penetrated the 3rd Panzer Army defenses and advanced sixteen kilometers on a fifty kilometer frontage. This forced the Germans to retreat beyond the Western Dvina River.[20] Simultaneously, the 3rd Belorussian Front's 39th and 5th Armies penetrated the Germans to a similar depth. Typical of the action is this account from the 39th Army.

> At 0800 hours, half an hour before the artillery preparation was to end, the commander of the 1st Battalion, 61st Guards Rifle Regiment, 19th Guards Division, Major B. F. Fedorov, observed that the Germans, unable to withstand the fire, were withdrawing from their front line positions. Major Fedorov immediately reported this through command channels. This resulted in the fires in this sector being quickly shifted deeper into the enemy defenses. Fedorov's battalion was able to rapidly advance and by noon, the main forces of the corps had secured a crossing over the Luchesa River. By the end of the day, the corps had driven over thirteen kilometers into the German defenses across a twenty kilometer front.[21]

Although the Russians successfully achieved a significant penetration into the German defensive zone, inflicting heavy losses in the process, all did not go as well as it should have. The marshy wooded terrain slowed and restricted movement to the roads which were already jammed, allowing the Germans to repeatedly bomb and shell Soviet troop concentrations.[22] Favorable conditions had been created for the encirclement and destruction of German forces near Vitebsk. But, the 3rd Belorussian Front's southern

assault group failed to achieve success the first day. This was due primarily to incomplete reconnaissance of the German defenses and poor counter-reconnaissance, allowing the Germans to determine the location of the Russian main effort. This was made worse by ordering only a 5-minute artillery strike into the depth of the German positions where reserve forces waited to repel the attack. Most fires were dedicated to suppression of forward defenses.[23]

Nonetheless, the 3rd Belorussian Front quickly pressed home the attack to the depth of the German defenses. The many streams and rivers in the zone continued to plague forward movement. The III Guards Mechanized Corps, part of the exploitation force, faced frustrating delays resulting from the lack of river crossing equipment. General Obulkhov, the commander, ordered the sinking of two or three of his precious tanks to act as bridge supports.[24] This showed the magnitude of his resolve to maintain his forward momentum. He then extended the outer encircling ring to a depth of 100-150 kilometers, thirty-five kilometers beyond the interior ring. Mobile groups of the 3rd Belorussian Front advanced 70-100 kilometers in the direction of Minsk while infantry formations of the Front simultaneously tightened their strangle hold and finished the destruction of the German forces in Vitebsk.

From 26-28 June, the 43rd Army of the 1st Baltic Front and the 39th Army of the 3rd Belorussian Front reduced the Germans encircled at Vitebsk. As the Soviets continued to develop their outer perimeter, they divided the Germans into two isolated parts even before the encirclement was completed. Both groups tried unsuccessfully to break out on 26 June, suffering significant losses. The Russian attack on 27 June against Bashki

resulted in further destruction and the surrender of the Germans remaining in Bashki by the morning of 28 June.

Exploiting the breakthrough, the 3rd Belorussian Front advanced 140 kilometers in six days, encircling the German 4th Army from the north. The remains of five German divisions were destroyed in the process resulting in 20,000 Germans killed and 10,000 captured.[25]

The Bobruysk Pocket. Further south, the 1st Belorussian Front initiated offensive combat activities on 24 June. Initial progress was painfully slow, again due to the marshy wooded terrain. The Front's northern assault group only advanced 500 meters this first day.

Units of the **XLII** Rifle Corps, under the command of General K. S. Kolganov of the 48th Army, were more successful. Initiative in penetrating and exploiting holes in the German defenses such as was shown by the commander of the 170th Rifle Division, Colonel Tsyplenkov, promoted the gains made that day. Using the attached 1890th Self-Propelled Artillery Regiment, COL Tsyplenkov outflanked the German strongpoint at Khapany. The self-propelled guns of this regiment were operating in the combat formations of the 170th Rifle Division as individual batteries in battalions of the 422d and 717th regiments. It was through a centrally planned, decentrally executed order that this was made possible. Later, COL Tsyplenkov utilized the fires of the 59th Gun and 63rd Howitzer Artillery brigades to repel German counterattacks at the end of this first day, 24 June.[26]

The 1st Belorussian Front's southern assault group enjoyed better success. This was due, in great part, to the artillery support provided. This

included employment of a new type of fire, the double moving barrage. By the end of the first day, these troops in the south had advanced from six to eleven kilometers across a frontage of thirty-three kilometers. The troops of both armies were more successful on the second day of the operation, 25 June, reaching the Dobritsa River.

Reduction of the German forces southeast of Bobruysk was the responsibility of the 48th Army. Destruction of the Germans in the city itself was assigned to elements of the 65th Army. Leaving behind substantial artillery[27], the majority of the Front continued in the exploitation. Concentrated air strikes were used to hasten the destruction of the encircled enemy. On 27 June, a massed attack by 523 planes inflicted enormous German losses. Thrusts by Russian ground troops converged toward Dubravka, dividing and destroying the survivors. By 1300 on 28 June, all German resistance south of Bobruysk had been eliminated. Within the city itself, two more days of savage fighting completed the destruction. The Red navy ferried 66,000 men and 1,550 guns and mortars across the Berezina River during the fight.[28] The Dniepr Naval Flotilla artillery also took part, firing in support of the reduction of the Germans within the city.

This account by an officer in the German 36th Infantry Division paints a first hand picture of the thousands of leaderless troops milling about, panicky and confused, in Bobruysk:

> "The Russians managed to encircle the 9th Army in the vicinity of Bobruysk. We received orders to break out, and we were successful in doing so at first...But the Russians created several rings around us, and every time we broke out of one, we found ourselves in another....Universal confusion was the result. German colonels and lieutenant colonels often tore their own shoulder boards off, threw away their caps, and sat down in

> anticipation of the Russians. Universal panic reigned....This was a catastrophe of a kind which I had never experienced before....It became impossible to keep up the fighting spirit of the troops."[29]

Minsk. After the Soviets had encircled and destroyed the Germans in Vitebsk and Bobruysk, their mobile forces thrust through the breaches created. They delivered a series of blows converging on Minsk. These forces linked up 200 kilometers deep within the German area of operation, encircling 105,000 enemy.

The reduction of this grouping of Germans proceeded from 5-11 July. The principle units involved were the 49th and 50th armies of the 2nd Belorussian Front, and the 33rd Army of the 3rd Belorussian Front. Attacking south of the Moscow-Minsk highway, the 33rd Army blocked the German route of retreat to the northwest with its right flank while it pressed the German formations toward Volma and Pekalin with its left. Part of the 49th and 50th Armies attacked west, south of Minsk, preventing escape in that direction.

Again, the surrounded enemy had been split in two. Fighting was fierce. One formation managed to penetrate the Russian inner perimeter on 7 July and escaped almost 70 kilometers to the vicinity of Kameysha before the 50th Army surrounded and liquidated it the following day. Scattered German forces refused to surrender and the battle continued until 11 July. Partisans played a major role in the operation. Approximately 70,000 Germans were killed. The remaining 35,000 Germans eventually surrendered, including three corps and nine division commanders.

Phase II

After suffering these staggering losses from which they would never fully recover, Army Group Center assumed the Soviets had reached the limit of their advance after the capture of Minsk. After all, in driving forward non-stop more than 200 kilometers, the Russians had exceeded their usual limit before pausing to resupply and reorganize.[30]

But, the Soviets had only reached their Phase I objectives. Phase II called for the continuation of the advance to a total depth of nearly 500 kilometers to a north-south line west of Brest.[31] (see Figure 5-1) Moving faster than Army Group Center could react, Russian troops blew through breaks in the German lines. Hitler placed Model in command of the survivors of Army Group Center and Army Group North Ukraine and ordered him to halt the Soviet advance. Finally, by 18 July, after covering over 350 kilometers at breakneck speed, the Russians out ran their supplies. Deep in recently held enemy territory, they halted to take time to rebuild blown bridges and destroyed rail lines.[32]

FIRE SUPPORT

Adequate fire support for committed combat units. By 1943 a battle-tested Red Army had taken shape. The "combined arms" army of 1944 usually included at least four regiments of artillery to support three corps of eight to twelve rifle divisions. In addition, one to two artillery divisions reinforced a 'breakthrough' army. Over and above organic artillery, other artillery available in this operation included:[33]

Artillery Divisions	10
Independent Artillery Brigades	21
Artillery Regiments	34
Mortar Brigades	3
Mortar Regiments	18
Rocket Launcher Divisions	3
Rocket Launcher Brigade	1
Rocket Launcher Regiments	11

Once the encirclement had been completed, the majority of the artillery attached to the encircling force remained in place to support the follow-on forces in the reduction effort. Thus, while only 25% of the troops were engaged in destroying the encircled Germans[34], up to 75% of the available artillery was devoted to this task.[35] An artillery division is made up of several long-range gun and howitzer regiments/brigades, a rocket brigade, and at least one antitank regiment/brigade.[36] Regimental artillery groups consist of one or two artillery and mortar regiments. Divisional artillery groups consist of one to three artillery and mortar regiments. Corps artillery groups, consisting of one or two artillery brigades, and army artillery groups were also used

Weight to the main effort. Soviet artillery preparations fired by ground forces were typically 120-140 minutes and of a weight and intensity not previously experienced in the war. These fires began with approximately fifteen minutes of concentrated fires against defensive positions to three kilometers in depth. This was followed by ninety minutes of destructive fires on preplanned targets including enemy artillery positions. The last twenty minutes of the preparation concentrated on the main defensive positions, building in intensity until just before the attack by ground forces.[37] The 1st Belorussian Front used a double moving barrage

for the first time during this operation, employing two artillery groups with densities of 120 guns per kilometer of frontage.[38]

Facilitate future operations. Throughout Operation BAGRATION, large quantities of artillery were positioned between the interior and exterior rings of the encirclements. Densities approaching 35-45 anti-tank guns per kilometer of frontage made it possible to repulse strong enemy attempts to break out of the pocket as well as attempts to relieve the encircled forces.[39] Wanting to commit as many forces to the exploitation as possible, a significant amount of the artillery which had been subordinate to the front was further subordinated to the army charged with the reduction mission.[40]

Immediately available fire support for the commander to influence the action. On an operation of this scope, the air arm supplied the majority of immediately available fire support for the front and army commanders. The timely use of bomber and fighter aircraft helped to overcome situations during the fighting when it became difficult for the Germans to transport their forces and supplies over land. A ninety minute attack delivered by over 500 aircraft as the Germans tried to break out of the Bobruysk encirclement resulted in the loss of nearly all their combat equipment. Massive casualties soon forced them to lay down their arms and surrender.[41]

Below Army level, artillery support was available for innovative use by commanders to immediately influence the outcome of a battle. This was demonstrated by COL Tsyplenkov's cited employment of the 1890th Self-Propelled Artillery Regiment.

Maximum feasible centralized control. Very detailed fire planning and generous allocation of ammunition typified the Soviet's centralized control of artillery. Use of such fire support assets as the Dniepr Naval Flotilla artillery, which took part in the reduction of Bobruysk, as well as the fighter and bomber aircraft, required centralized control. During execution, this support remained responsive to requests from local commanders such as during the 39th Army attack during the Vitebsk break through on 23 June.

SIGNIFICANCE OF THE ACTION

This operation is distinguished from previous operations by the short time needed to liquidate the encircled enemy. While ten weeks were required to defeat the Germans once they were surrounded at Stalingrad, it took only three days at Bobruysk, two days at Vitebsk, and six days at Minsk.[42] This is because steps 4 (Forming the Outer Ring), and 5 (Reduction of Enemy) were conducted simultaneously, not sequentially. Complete encirclement and destruction of the enemy proceeded as a single process. Rather than form a solid outer ring, combat activities concentrated on blocking routes of escape and cross compartmentalization, splitting the enemy into parts.

The destruction of Army Group Center set the scene for the final episode of the Russian campaign. It sealed the fate of the Third Reich in the East just as the collapse of the German Armies in Normandy would seal it in the West a few weeks later.

LESSONS LEARNED

Activities proceeded non-stop, day and night, with generous support supplied by artillery and air strikes. Soviet air support wisely focused initially on German artillery in a counter-battery role. Having underestimated the strength of Soviet air power, German artillery was generally emplaced close to the front in open positions. This provided with fields of fire for direct engagement against tanks, but offered near zero protection against air strikes.[43]

This operation reinforces the lesson that during an encirclement, air blockade plays a major role. This also illustrates that efforts to reduce an encircled force must proceed simultaneously with repelling enemy relief attempts and tries by the encircled force to break out. Artillery must be brought in from unthreatened sectors and concentrated between the inner and outer perimeters. Coordination with the other combat arms is crucial due to the artillery's limited ability to defend itself against armored forces.

Before 1944, the question of quantity and organization of artillery was not completely resolved. It was during Operation BAGRATION that Soviet artillery groupings assumed their final form of the war, a form largely retained today. Regimental artillery groups having one or two artillery and mortar regiments, divisional artillery groups having one to three artillery and mortar regiments, corps artillery groups having one or two artillery brigades, and army artillery groups were all used.[44] Then, as now, the artillery groups were formed on the basis of the organizational-tactical situation, not in terms of specific missions.

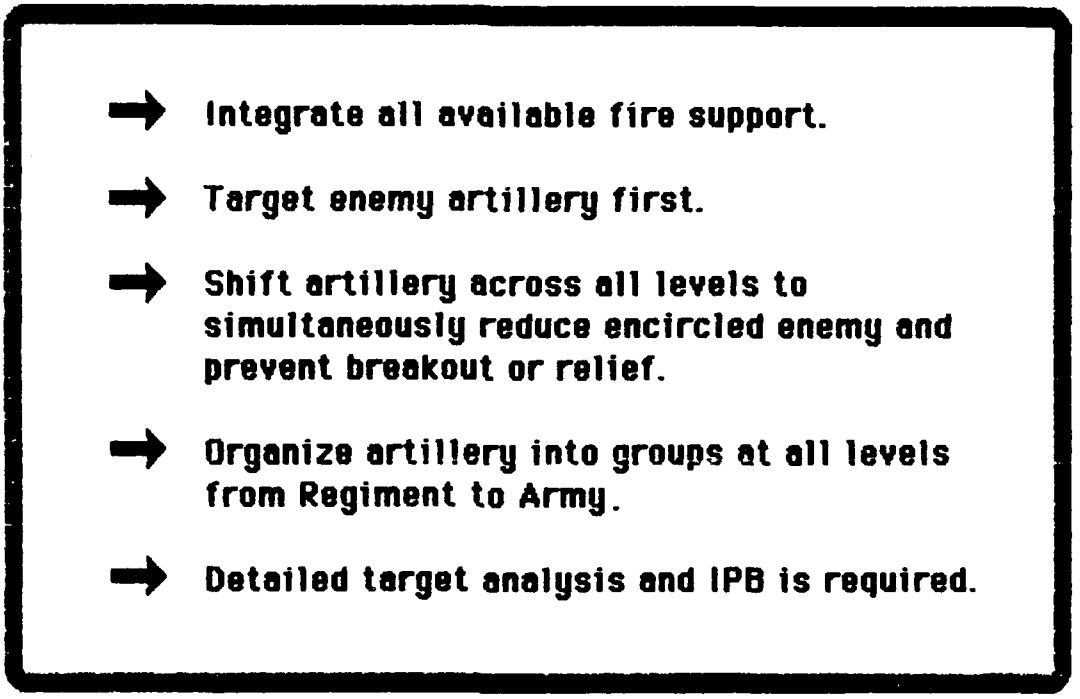

Figure 5-2 Soviet Lessons Learned

The proportion of massed artillery versus observed battery fire shifted dramatically during these final months of the war. During the first two-thirds of the war, 80-90% of fires were classified as observed battery fires. However, by 1944, less than 75%, and usually only 20%, of the fires were classified as such with massed artillery fires making up the balance.

Without the numerical superiority the Soviets had against Army Group Center, detailed target analysis, reconnaissance, and intelligence preparation of the battlefield are required if preparatory and unobserved fires are to be effective.

[1]Gerd Niepold, Battle for White Russia (London, England: Brassey's Defence Publishers), 1987, p. 7 and The History of World War II, Volume 23 (London: Orbis Publishing), 1984, pp. 2147-2149.

[2]Niepold, p. 41.

[3]Ibid., p. 10.

[4]Red Army Field Regulations, Field Service Regulation, 1944 (Translated by the Foreign Broadcast Information Service (JPRS-UMA-85-006), 17 January 1985), p. 7.

[5]Ibid., p. 82.

[6]Ibid., p. 84.

[7]Ibid., p. 85.

[8]Ibid., pp. 87-89.

[9]Earl F. Ziemke, Stalingrad to Berlin: The German Defeat in the East (Washington, DC: Office of the Chief of Military History), 1968, p. 316.

[10]Niepold, pp. 36-44.

[11]Ziemke, p. 313.

[12]F. O. Miksche, Attack: A Study of Blitzkrieg Tactics (New York: Random House), 1942, p. 33.

[13]Niepold, p. 13.

[14]Ibid., p. 14.

[15]Ibid., p. 77.

[16]Ibid, p. 14.

[17]Ziemke, p. 314.

[18]Niepold, p. 15.

[19]Ziemke, p. 315.

[20]Viktor A. Matsulenko, Encirclement Operations and Combat, USSR Report translated by FBIS from MILITARY AFFAIRS (1983), p. 95.

[21]Ibid.

[22]Studies on Soviet Combat Performance (Dunn Loring, Virginia: Historical Evaluation and Research Organization), June 1977, p. 60.

[23]Matsulenko, p. 96.

[24]Studies on Soviet Combat Performance, p. 69.

[25]Matsulenko, p. 158.

[26]Ibid., p. 96.

[27]COL David Glantz, Deputy Director of the Soviet Army Studies Office, interview by author, Fort Leavenworth, KS, 26 January 1989.

[28]Matsulenko, p. 158.

[29]Ibid.

[30]Ziemke, p. 326.

[31]Niepold, pp. 39-43.

[32]Ziemke, p. 326.

[33]Niepold, p. 58.

[34]S. V. Shtrik, "The Encirclement and Destruction of the Enemy During Combat Operations Not Involving the Use of Nuclear Weapons," Voyennaya Mysl (January 1968), p. 284

[35]COL Glantz interview by author.

[36]FM 100-2-1, The Soviet Army: Operations and Tactics (Washington, DC: HQ Department of the Army, 1984), p. 9-1.

[37]Niepold, p. 62.

[38]Matsulenko, p. 55.

[39]N. Korbin, "Encirclement Operations," Soviet Military Review (August 1981), p. 38.

[40]COL Glantz interview by author.

[41]Korbin, p. 38.

[42]Matsulenko, p. 160.

[43]Ziemke, p. 321.

[44]Matsulenko, p. 54.

Chapter 6

CURRENT STATE OF AFFAIRS -- SOVIET

Through their military scientific studies in the 1920's and 1930's, the Soviets grasped the impact of the changing nature of war. Recognizing the gap between national strategy and the tactics of fighting to achieve national goals, the Soviets were the first to develop what has been called the "operational art" of war.[1]

The Front is the Soviet military combat organization sometimes compared to a NATO army group. The Soviet Front commander commands two to six combined-arms or tank armies and, something a NATO army group commander does not have, his own air force. Fronts play the main role in seizing and occupying territory. A Soviet Front is the highest level operational formation in the Soviet Army. Planning at Front level supports the conduct of deep operations into the enemy's rear.

Armies attack on multiple axes to split defenders into isolated groups which can be destroyed while offensive action is continued toward the enemy's rear area. Converging attacks designed to envelop enemy forces are routinely planned.[2] As stated in FM 100-2-1, The Soviet Army: Operations and Tactics, "The overriding aim in a Soviet front offensive is to delay or prevent the war from turning nuclear by the swift, early destruction or neutralization of enemy nuclear weapons by non-nuclear means."[3] The Soviets have three basic forms of maneuver in the attack; the frontal attack, the flank attack, and the envelopment.[4] Envelopment and

encirclement of the enemy is the Soviet method of choice for destroying the enemy.[5]

Based on such pre-WW II writings as those of Marshal of the Soviet Union Tukhachevski, the Soviet artillery was reorganized by 1943. Within the reserves of the Supreme High Command (RVGK) artillery, the proliferation of individual regiments and battalions hampered the execution of operational maneuvers and time in massing of supporting fires. As a result, these organizations were consolidated in artillery divisions.[6]

It has been realized in recent years that there will be a conventional phase in any future war. This translates to a reliance on artillery to accomplish many missions previously delegated to nuclear weapons. The Soviets have, as a result, conducted extensive studies of military historical experience in seeking solutions to anticipated problems on the modern battlefield. Such an attempt at solving today's problems has been questioned. Is it proper to try and apply the lessons of World War II today when we are under the constant threat of use of nuclear weapons? The Soviets have attempted to avoid the mechanical application of such lessons from the Great Patriotic War, trying instead to apply them creatively. This has resulted in significant increases in deployment of self-propelled artillery and the development of new systems.[7]

Soviet doctrine is often viewed as rigid and restricting. The U.S. Army takes pride in its "Yankee ingenuity," initiative, and inventiveness. "Initiative" is one of the four tenets of our AirLand battle doctrine.[8] Improvisation is one of the five sustainment imperatives and is similarly cited as being essential to success.[9] The Soviets do not see things this way.

What is perceived by many Westerners as inflexibility is, to the Soviet, the essence of their "military science." "Native wit," in their words, has its place, but it cannot substitute for a well-developed and thought-out plan.[10] Nonetheless, in World War II the Soviet Army leader did not always blindly follow set orders. And it is unlikely he would do so today.

Recent Soviet military writings have identified several problems with attempting to utilize the tactics and techniques of World War II in executing large encirclement operations today. Compared to a frontal attack or flank attack, the number of troops needed to conduct an encirclement as it was done in World War II is high. Additionally, they are cognizant of the threat posed by nuclear weapons which will not allow them to mass for the times typically required in their World War II operations. These are two of the reasons they have decided to rethink their tactics.

No longer do they plan to establish semi-continuous inner and outer rings. Future envelopments will be characterized by blocking forces established to deny to the encircled force the best routes of withdrawal.[11] The enemy may well choose to fragment his force in an attempt to escape encirclement. This allows the encircling force to complete the original aim of the operation, the destruction of the enemy, with little cost. Also, to save time, the reduction of the enemy must start even before the encirclement is complete. Long range artillery, air strikes, and splintering attacks into the enemy flanks now become the tactics of choice.

This does not mean the encirclement has lost its importance to the Soviets. It is now recognized, however, there can be no pause in forward momentum while an encircled force is annihilated. Enemy corps and division

sized units will still be targeted for encirclement by the Soviets, especially if this can be completed early enough in the war that nuclear escalation is unlikely. Forces smaller than a division, the Soviets feel, can be bypassed with relative impunity.[12]

Although planned, wargamed, and practiced, to be successful, an encirclement operation calls for quick decision making and proven initiative by commanders at all levels. During offensive operations, some defending enemy units will be more susceptible than others to encirclement. Recognizing a fleeting opportunity and issuing the necessary orders in a timely manner is critical to success, but many Soviet commanders are unfamiliar with and are reluctant to exercise such initiative.[13]

FORCE STRUCTURE

The lessons of World War II on the use of artillery in the reduction of an encircled enemy have not been lost on the Soviet Army. Today the Warsaw Pact has retained sizable army and front artillery organizations and introduced more self-propelled artillery. The organic artillery brigade at army level has four battalions as shown below in Figure 6-1.[14]

A typical front may have one or two artillery divisions. Each of these artillery divisions typically has five regiments or brigades and a rocket launcher brigade as shown in Figure 6-2.[15] This gives them the forces to simultaneously reduce an encircled enemy while continuing to support the exploitation.

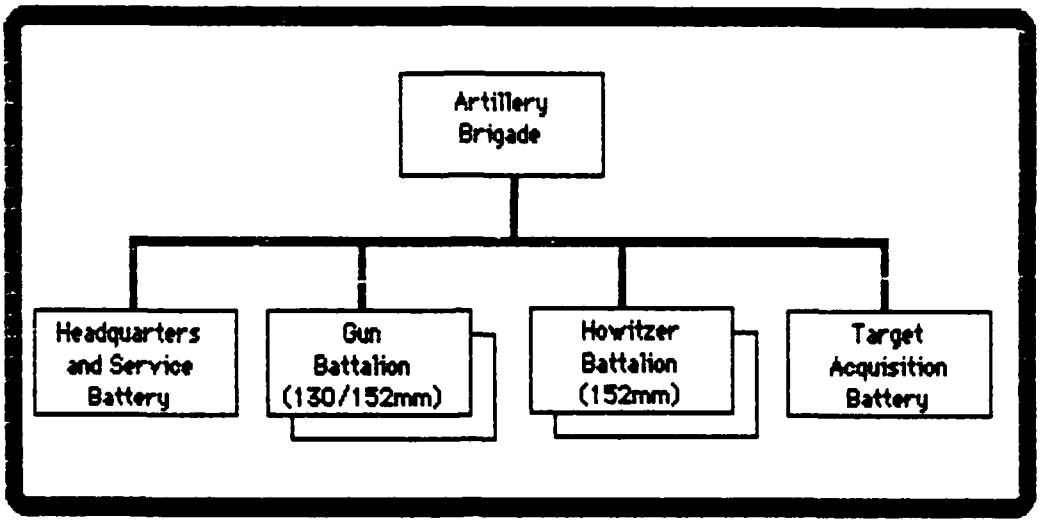

Figure 6-1 Artillery Brigade, Combined Arms Army or Tank Army

The formulation of artillery into army, divisional, and regimental artillery groups permits maximum exploitation of artillery capabilities by maneuver commanders. At the same time it provides for continuous artillery support while retaining the maximum degree of centralized control.

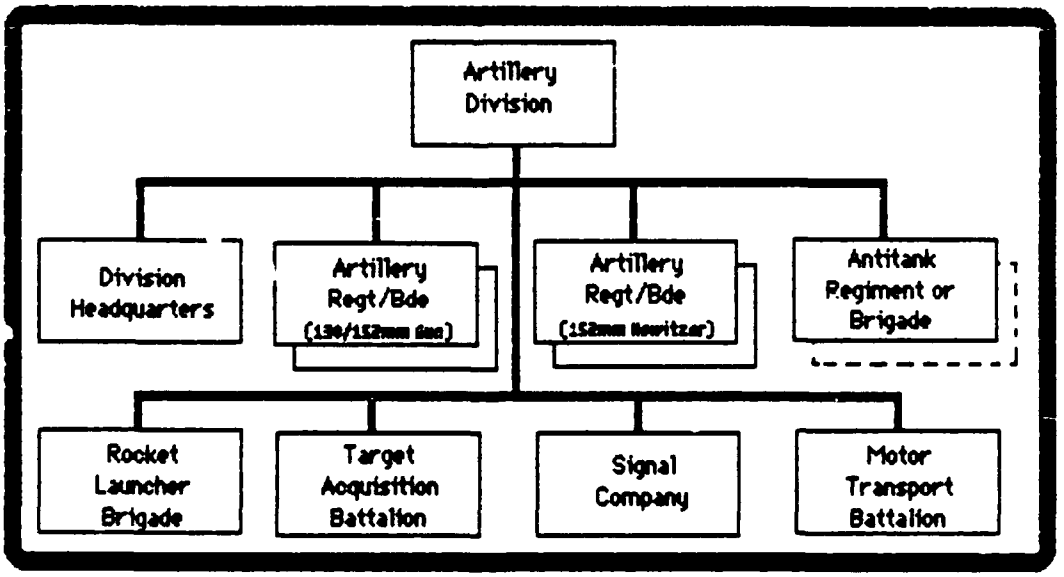

Figure 6-2 Artillery Division, Front

Since 1981, the Soviets have replaced most of their towed artillery systems with self-propelled howitzers while increasing the number of tubes per battalion from eighteen to twenty-four in Soviet and Warsaw Pact divisions facing NATO. Self-propelled 152mm and 203mm howitzers and guns and 240mm mortars are replacing towed models in front and army artillery divisions and brigades, too. Besides the increasing availability of subprojectile and other special purpose warheads, these new guns and howitzers can fire chemical rounds. All 152mm and larger artillery is considered capable of firing tactical nuclear projectiles.[16]

Attachment of an entire eighteen or twenty-four gun self-propelled artillery battalion to the lead maneuver battalion spearheading a breakthrough is standard Soviet procedure. So, too, is supplementing target acquisition means to report targets suitable for engagement by long-range rocket and guns.[17] Such targets as enemy nuclear delivery means, artillery, and airfields are high on the priority list. Reporting back locations of such targets allows advancing artillery to conserve its own stocks of ammunition. Additionally, employing the firepower of helicopter gunships such as the HIND and close air support by fixed-wing aircraft is planned.[18]

FIRE PLANNING

Fire planning is kept highly centralized, integrating conventional artillery, air strikes, missile strikes, and possible nuclear or chemical fires. Target priorities are established as shown in Figure 6-3.[19]

The standard "military science" approach the Soviets take to fire planning describes each target in terms of "norms." A "norm" is the number of rounds needed to achieve the desired effect (suppression or destruction)

Because of the need to determine ammunition requirements and a distribution plan, fire planning is methodical and highly quantitative.[20] Once step 5 of an encirclement (exploitation/reduction) has begun, supporting artillery will engage withdrawing enemy units and attempt to destroy or suppress units left in contact. The artillery remains prepared to move quickly across the width and depth of the operational area. It is ready to reorganize to reinforce maneuver units in the exploitation or to support follow-on units committed to the reduction effort.

1. **Nuclear Weapons and Launchers**
2. **Artillery and Air Defense**
3. **Defensive Strong Points**
4. **Command, Control, & Communications Centers**
5. **Routes out of (Breakout) and into (Relief) Encirclement**

Figure 6-3 Soviet Target Priorities

At every level, the value of detailed prior planning throughout all foreseeable phases of the battle is clearly recognized. Centralized planning with decentralized execution is the rule. Wh... possible, artillery groups are organized for specific purposes and assigned fire support missions based on needed range and relative mobility (towed versus self-propelled). This indicates a degree of operational and tactical flexibility uncharacteristic of the stereotyped Soviet soldier popular in western literature. To eliminate redundant and conflicting fire planning efforts, the

Soviets have adopted the practice of subordinating all reinforcing artillery units, and, to a large degree, their commanders, to organic, reinforced, artillery units.[21]

ORGANIZATION FOR COMBAT

If, during an operation, the Soviets end up with a large encircled enemy force, they see their options as containment or reduction. It boils down to the question of what is the priority mission. Usually, this is exploitation. The Soviet commander must determine if he has enough infantry with enough fire power to accomplish containment and/or reduction while allocating most of his forces to the exploitation. When it is decided that the exploitation will be the priority mission, the Soviets tend to reduce their encircling infantry strength as low a level as possible. They will, however, leave most of their indirect fire power in place to support the work of containing and destroying the encircled force. Follow-on infantry units are typically assigned this mission of containment and/or reduction while already committed infantry join in the pursuit. Front and army artillery assets already in position around the encircled enemy will usually remain in place.[22] Based on historical analysis, exercises, and experimentation, the Soviets have determined the minimum required densities for artillery based on the number of targets to be engaged, number of rounds required per target, and the time available to fire the rounds.[23] These are shown in Figure 6-4.

The availability of helicopters and close support aircraft play a role in this planning and is subjected to the same sort of "norm" allocation process.

Against a Prepared Defense on Main Axis	**100-120 wpns/km**
Against a Hasty Defense on Main Axis	**70- 80 wpns/km**
Against a Minor Axis	**40 wpns/km**

Figure 6-4 Standard Soviet Artillery Densities

Five types of fires are employed by the Soviets depending on the situation.[24] BARRAGE FIRE is defensive and usually employed against a counterattacking force. A FIRE CURTAIN or ROLLING BARRAGE is another type of fire. This is used almost exclusively in the offense. It is unlikely either of these types of fires will be used in the reduction of an encircled enemy. Figure 6-5 shows the types of fires most likely to be used to reduce an encircled enemy.

- **FIRES AT POINT TARGETS: Usually fired by battery, platoon, or single gun. May be either direct or indirect.**
- **CONCENTRATED FIRE: Battalion or battery fire against important targets. Usually short in duration (approximately 5 minutes).**
- **SUCCESSIVE CONCENTRATIONS OF AIMED FIRE: A series of concentrated fires located throughout the width and depth of the enemy position and fired according to a schedule.**

Figure 6-5 Soviet Fires in Reduction of an Encircled Enemy

Since 1981 the Soviets have significantly increased the deployment of cannon-launched and short-range rocket (less than 500 kilometers), nonstrategic, nuclear forces. Currently they enjoy a nearly 2:1 advantage.[25] This could have long-ranging affects on their fire planning in the reduction of a large group of encircled enemy. Despite the asymmetrical reductions of the intermediate-range nuclear forces (INF) category of weapons, the Warsaw Pact theater today retains a greater capability than the NATO alliance in nonstrategic nuclear weapons.

CONCLUSIONS

The Soviet approach to artillery planning and employment, specifically that for the reduction of an encircled enemy, is substantially different from the American approach. The Soviet's approach is founded on scientifically based pains taking analysis of artillery capabilities and effects which provides them with a structured framework within which to conduct their planning. The Soviets generally plan employment of larger amounts of artillery, up to 75% of that attached to both the exploiting and reducing forces,[26] in executing the reduction of an encirclement than do western planners. In addition, they feel confident in being able to systematically predict success and failure. They believe they can rapidly turn tactical success into operational success, and victory on the battlefield, by applying these structured techniques.

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[1]David M. Glantz, "The Nature of Soviet Operational Art," Parameters (Spring 1985), p. 4.

[2]FM 100-2-1, The Soviet Army: Operations and Tactics (Washington, DC. HQ Department of the Army, 1984), p. 4-1.

[3]Ibid.

[4]Ibid., p. 5-13.

[5]Charles J. Dick, "Soviet Operational Concepts: Part II," Military Review (October 1985), p. 15.

[6]K. P. Kazakov, Always With the Infantry, Always With the Tanks, trans. Leo Kanner Associates (Moscow: Voyenizdat, 1973), p. 122.

[7]James F. Holcomb, Jr., "Soviet Artillery Utilization," article written for the Soviet Army Studies Office, Fort Leavenworth, KS (March 1988), p. 1

[8]FM 100-5, Operations (Washington, DC: HQ Department of the Army, 1986), p. 15.

[9]Ibid., p. 63.

[10]C. N. Donnelly, "The Development of Soviet Military Doctrine," International Defense Review (No. 12/1981), pp. 1590.

[11]Dick, p. 16.

[12]Ibid., p. 17.

[13]Ibid., p. 18.

[14]Soviet Ground Forces (Fort Leavenworth, KS: Command and General Staff College, AY 1988-89), p. 53.

[15]Ibid., p. 63.

[16]Frank C. Carlucci, Soviet Military Power: An Assessment of the Threat 1988 (Washington, DC: U.S. Government Printing Office, 1988), pp 75-76.

[17]Christopher Bellamy, "Soviet Artillery and Rocket Forces, 1940-1980," Jane's Defence Review Vol 4, No. 3 (1983), p. 279.

[18]Ibid.

[19]Holcomb, p. 7.

[20]FM 100-2-1, p. 5-17.

[21]Mark P. Gay, "The Field Artillery in Support of Deep Offensive Missions," MMAS Thesis (Fort Leavenworth, KS, 1985), p. 71.

[22]COL Glantz, Deputy Director of the Soviet Army Studies Office, interview by author, Fort Leavenworth, KS, 26 January 1989.

[23]Holcomb, p. 5.

[24]Ibid., p. 10.

[25]Carlucci, p. 109.

[26]COL Glantz interview by author.

Chapter 7

CURRENT STATE OF AFFAIRS -- US

Analysis of experience in World War II brought about some changes in U.S. artillery doctrine almost immediately. Significant was the increase in artillery tubes from four to six in direct support artillery batteries and the elimination of the cannon company in the infantry regiment. These changes resulted directly from the recognition of the important requirement for closely coordinated and effective firepower.[1] But, the army leadership's chief concern now turned to survivability on the atomic battlefield. Operational level artillery support, such as needed during a large-scale encirclement, fell by the wayside. Future conflicts on the atomic battlefield, it was felt, would be so drastically different that most doctrine and organizations validated in World War II were considered obsolete.[2]

Atomic weapons were not employed during the Korean conflict, however. The threatened use of such weapons was real, but instead, as during the static stages of World War I, artillery filled the critical role of reducing enemy centers of resistance, replacing maneuver as the primary means for achieving military objectives. General Ridgway explained this in stating, "Steel is cheaper than lives and much easier to obtain."[3] As many as fourteen separate artillery battalions were often called upon to mass their fires on a single target area. Opportunities to maneuver large units were few, though. Hence, arguments for establishing artillery groups above the corps artillery headquarters had no support.

Later, the war in Viet Nam did not demonstrate a requirement for significant artillery organizations above division level. Instead, the "fire base" concept was adopted. Once again, the firepower of artillery substituted for maneuver against a seemingly invisible enemy on a non-linear battlefield. Force design analysts were again left to wrestle with the question of operational artillery support.

The 1982 edition of FM 100-5, Operations, returned the Army's focus to Europe with emphasis on the defense at division level. The 1986 edition of this manual opened our eyes to the picture of future conflict in which the employment of corps and army artillery definitely has a role. The number of tubes per direct support artillery battery has been increased from six to eight, double the number in World War II. Today we are focusing much attention toward correcting an admitted weakness in exercising joint and combined operations. Conduct of a large scale encirclement operation in Europe will almost certainly be a combined operation. While we are getting better at developing and exercising combined doctrine, much work is still needed. How to conduct a combined operation to encircle and reduce a division- or larger-sized enemy force in Europe has yet to be thoroughly addressed.

FORCE STRUCTURE

A force structure which is highly mobile, flexible, and capable of acting and reacting to rapidly changing situations is needed for encirclement operations. Speed, surprise, deception, and action early in the operation are needed for success.[4]

Between World War I and World War II, isolationist attitudes and small army budgets limited development of an offensively oriented military doctrine. Senior military leaders limited their experimentation to brigade level exercises with no requirement for large, mobile artillery formations.[5]

The realities of World War II brought reorganization to the artillery. Non-divisional artillery battalions were created and routinely attached to other artillery headquarters at every level from battalion through army. The most common subordination was to groups under the control of the corps artillery commander. The allocation of artillery cited in Chapter 4 from Third US Army's after action report illustrates the standard practice of allocating set amounts of artillery to all committed units while giving those conducting the main effort just a little more. Though some larger-caliber, longer-ranging battalions remained attached to field artillery brigades at army level for interdiction and destruction missions, no artillery commander was authorized at army or army group level. As a result, fire planning conducted at corps headquarters was seldom directive. This contrasts sharply with the Soviet allocation process of massing RVGK and front artillery along the axis of main effort.

After enjoying a period of modernization and increased military spending, budget cuts are again a reality. Figure 7-1 shows the new organization and features of the heavy division artillery under the Army of Excellence (AOE). Current analysis is dominated by "joint" operations and the Army's Combined Training Center (ACTC) system's battalion and brigade level performances at the National Training Center (NTC). Creating additional artillery resources at echelons above corps, although sometimes considered, is expensive. Figure 7-2 shows the heavy division "slice" of

corps artillery and the corps general support artillery called for under the AOE's Echelons Above Division (EAD) transition plan.[6] The Battle Command Training Program (BCTP) involves division and corps commanders and staff war-gaming. As the first division and corp battle staff evaluations begin, the question of resourcing and structuring necessary support at corps and above echelons for operations such as large encirclements must be addressed.

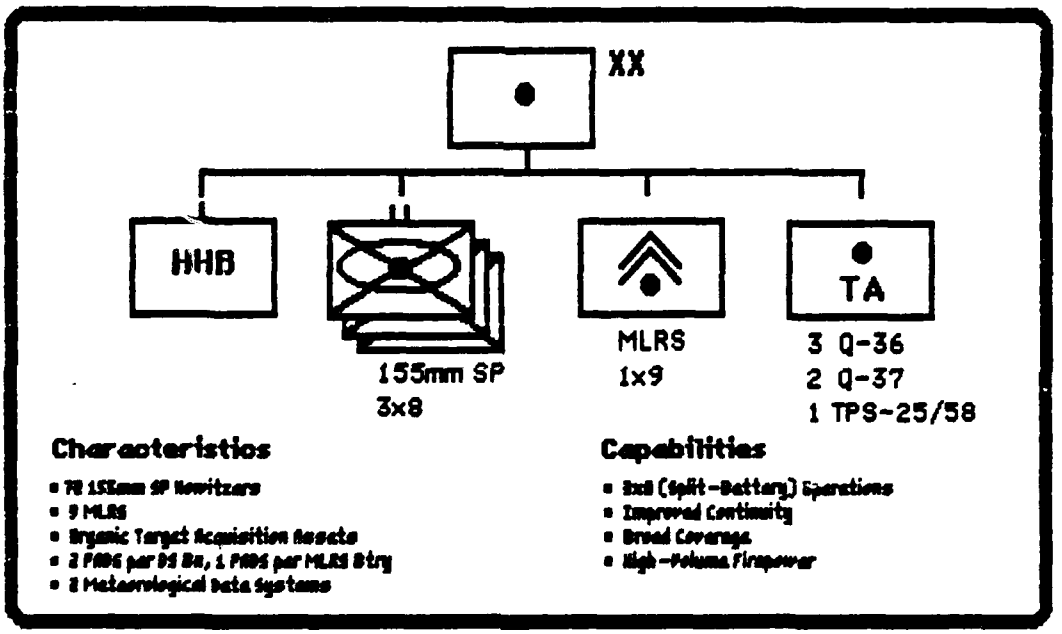

Figure 7-1 AOE Heavy Division Artillery

COMMAND, CONTROL & COORDINATION

Today, just as during the Second World War, no artillery commander is authorized at army or army group level. FM 6-20 admits that, "If a theater of war is organized into army groups and armies, it will be necessary to provide fire support officers and fire support sections at the headquarters of these units." These officers will have to come "from Army troops" with primary responsibility only to advise the commander.[7] Even at corps and

division and brigade level there is no doctrinal answer to the question of who "commands" reinforcing artillery. Despite the inability to order regrouping or inter-army movement of large numbers of non-divisional artillery units to support a campaign plan, the timely recommendations of the Field Artillery Section during World War II did much to smooth the

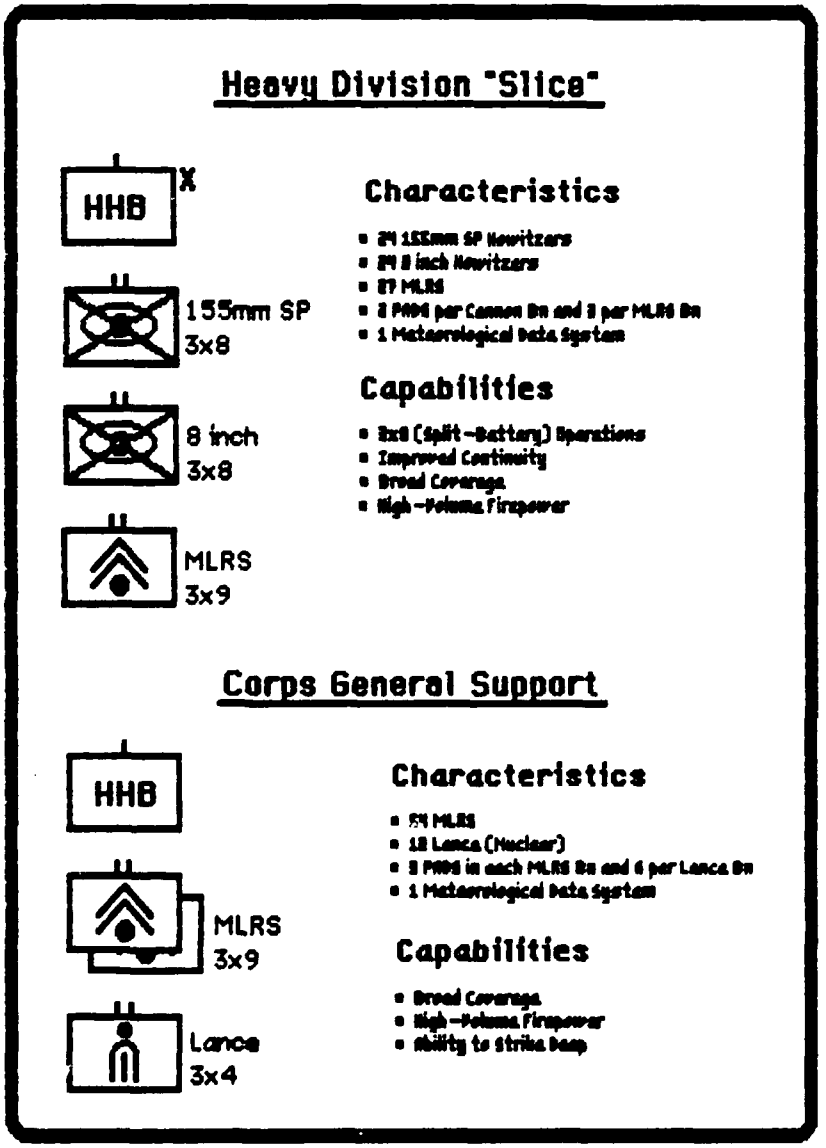

Figure 7-2 Corps Artillery
Heavy Division "Slice" & General Support

administrative and coordination headaches which would otherwise overburden subordinate artillery echelons.[8] These sections functioned best as liaison officers and on-the-spot advisors to army commanders during rapid changes in the allocation of artillery such as will occur during an exploitation and simultaneous reduction effort following an encirclement. There is little reason to believe artillery planning, coordination, and execution would differ much from this today.

Some critics of the current doctrine point out that the limited ranges of present howitzers makes decentralized control inevitable given the expanded zones of responsibility assigned to today's division and corps.[9] FM 100-15, Corps Operations, still calls for corps artillery to be "used to add depth to the battle, support rear operations, and to influence the battle at critical times" after artillery, rocket, and missile battalions have been organized into brigades and allocated as needed to augment the fires of committed maneuver units.[10]

During the last half of World War II, the Soviets consistently massed much larger groups of artillery in support of their operations than did the U.S. Army. A typical Soviet motorized rifle division today contains 215 artillery pieces. A Soviet tank division contains 165 artillery pieces.[11] A U.S. heavy division contains 120 artillery tubes including those corps assets normally in support of the division. Vastly improved target acquisition means and the threatened use of nuclear and chemical weapons makes physically massing artillery units on the battlefield infeasible today. Technological improvements promise some relief to the problem of executing centralized control over decentralized units. Semi-autonomous fire support by individual artillery weapons has has been demonstrated

under the Howitzer Improvement Program (HIP) at Fort Sill.[12] This allows the fires of many geographically dispersed firing units to be quickly and accurately massed against a specified target while at the same time significantly enhancing the survivability of the firing units from enemy counterfire. This exciting innovation promises to rewrite traditional artillery tactics and organizations.

As pointed out in chapters 1 and 2, when the current manuals do mention encirclement operations, they stop short of addressing the reduction of the encircled enemy. If a corps is given the mission to reduce a pocket of encircled enemy, to whom does the corps artillery coordinator make his recommendations? If a corps plans and conducts an encirclement operation as part of an offensive, it is likely it will devote the priority of effort to exploiting its success. This would likely leave the deputy corps commander and a tactical combat force (TCF) responsible for reduction of the encirclement as a "rear" operation. The TCF is normally a composite brigade-sized force made up of ground maneuver, aviation, and artillery assets.[13] In this case, the deputy corps commander becomes the person to whom the fire support coordinator makes his recommendations for the reduction effort.

It is likely that in a NATO versus Warsaw Pact war, annihilation of division-sized invading forces will be more a key to success than attempts to conduct an offensive encirclement. There is little functionally different in reducing an enemy force that you have broken through, cut off, and encircled, and reducing an enemy force that has driven deep into your rear which you have now cut off. Under these circumstances, the reduction would become the priority mission since there is no exploitation to support.

Whether it is agreed or not that we need to develop the doctrine, tactics, and techniques to conduct a large-scaled encirclement, it should be accepted that we need to clearly address the reduction of a large encircled enemy force.

THREAT TO ARTILLERY

A Soviet or Soviet-styled force continues to represent the greatest conventional military threat to our army. Technological achievements in recent years have given the Soviets qualitative improvements to their artillery on top of the quantitative edge they already had. The Soviets have recognized, however that massing men and materiel in a decisive area can be detected, targeted, and destroyed. There is evidence that they have modified their fire support doctrine as shown in Figure 7-3.[14]

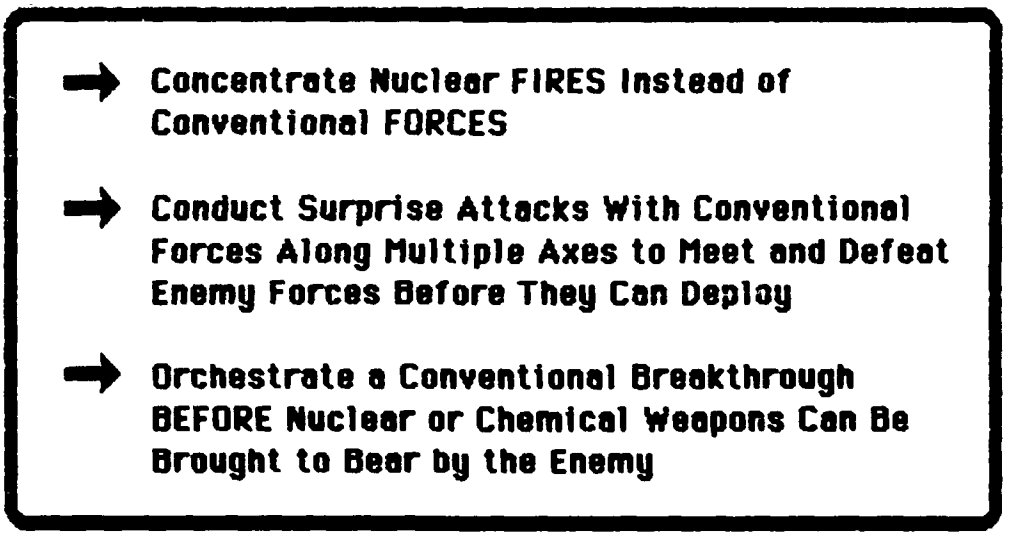

Figure 7-3 Modified Soviet Fire Support

Confronted by such an enemy, we will be considerably outnumbered in artillery. To be victorious, we must retain the initiative and a balanced application of firepower and maneuver. This becomes extremely risky when

allocating scarce artillery assets to a secondary effort, the reduction of an encircled enemy.

PRESENT V AND VII CORPS SITUATIONS

The two deployed U.S. corps in Europe are in the best position to provide information on the current U.S. state of affairs with regards to this thesis subject. The **V** and **VII** Corps Artillery commanders supplied responses to the questionnaire at Appendix A. Their comments are summarized below:

The omission of a documented approach to reducing an encircled enemy was acknowledged. But when asked if they thought field artillery doctrine as expressed in the current manuals was adequate, both said yes. One reply commented that assignment of such a mission would so depend upon the factors of METT-T (mission, enemy, terrain, time, troops available) that any attempt to prescribe a doctrinal technique would fall short of meeting the needs of the supported commander. Another comment pointed out that specific doctrine to support an encirclement operation is unneeded. Given the artillery mission of support to the maneuver commander, it was felt that basic field artillery techniques already adequately covered in existing publications were sufficient.

When asked about current training requirements w[illegible] practice the tasks necessary for a reduction effort, neither expressed any real need for concern. They seemed confident that an encircled enemy could be reduced using existing practiced techniques and procedures. However, both acknowledged that their fire support elements has never been asked to plan for or support the reduction of a large encircled enemy force in any of their

corps level exercises. The reduction of a large encircled enemy force is probably not included among those tasks they consider critical.

In reply to the detailed scenario specific questions, it was suggested that a cannon artillery brigade which had been left under corps control should instead be task organized under one of the maneuver units since "corps does not need to control cannon units." This is in line with current thoughts on only retaining rocket and missile units under direct corps control and with the "new look" called for under the AOE's Echelons Above Division (EAD) transition plan shown in Figure 7-2. However, the retention of cannon units in a corps general support role may be justified during reduction efforts.

Response to concerns about converging unit boundaries, establishment of fire support coordination efforts, and differentiation between "friendly" and "enemy" target acquisitions was short. Reliance on guidance from maneuver commanders on the scene and on common sense was stated as a solution.

Both respondents also submitted comments pointing out that, given our force structure, we are destined to fight outnumbered and will have few opportunities to "annihilate" any enemy force. They went on to point out that the Soviets are experts in encirclement operations, making it a keystone of their offensive doctrine. Citing our global responsibilities and fiscal constraints, one concluded "our doctrine regarding reduction of encirclements is wholly adequate when supplemented by our in-place tactical doctrine and combined arms techniques."

[1]Robert A. Doughty, "The Evolution of US Army Tactical Doctrine, 1946-76," Leavenworth Papers No. 1 (August 1979): p. 3.

[2]David L. Ingle, "The Role of Corps Artillery in the AirLand Battle Concept," MMAS Thesis (Fort Leavenworth: Command and General Staff College, 1982), p. 40, in Mark P. Gay, "The Field Artillery in Support of Deep Offensive Missions," MMAS Thesis (Fort Leavenworth, KS, 1985), p. 121.

[3]Doughty, p. 11.

[4]Michael H. Vernon, "Encirclement Operations," Military Review (September 1986): p. 16.

[5]Mark P. Gay, "The Field Artillery in Support of Deep Offensive Missions," MMAS Thesis (Fort Leavenworth, KS, 1985), p. 82.

[6]Bernd L. Ingram, "3x8 and Beyond: Force Structure Changes for the Field Artillery of Tomorrow," Field Artillery (February 1989), p. 22.

[7]FM 6-20, Fire Support in the AirLand Battle (Washington, DC: HQ Department of the Army, 1988), p. 2-2.

[8]Gay, pp. 98-99.

[9]Ibid., p. 169.

[10]FM 100-15, Corps Operations (Final Draft) (Fort Leavenworth, KS: US Army CGSC, 1988), p. 2-9.

[11]Frank C. Carlucci, Soviet Military Power: An Assessment of the Threat 1988 (Washington, DC: U.S. Government Printing Office, 1988), p. 74.

[12]ST 6-50-60, M109A3E2 HIP Howitzer (Final Draft) (Fort Sill, OK: U.S. Army Field Artillery School, February 1988).

[13] FM 100-15, p. D-9.

[14]FM 6-20, p. 1-7.

Chapter 8

CONCLUSIONS & RECOMMENDATIONS

This study examines the adequacy of current field artillery doctrine, tactics, and techniques to support the reduction of an encircled enemy force. Such an examination using historical examples is of little use if no attempt is made to assess relevance on the modern battlefield. While history offers some useful benchmarks in examining ways of fighting today's battles, the application of these considerations into doctrine must be tempered with judgment and an appreciation for the new face of the AirLand Battlefield.

The European contingencies today have some historical precedent in World War II. The corps operations "bible," FM 100-15, deserves credit for at least identifying what must be considered in encircling and reducing an enemy force. It even elaborates in some detail on both a reduction by fire alone and a reduction by fire and maneuver.[1]

The artillery capstone doctrinal manual, FM 6-20, Fire Support in the AirLand Battle, identifies the foundation, components, and responsibilities of the fire support system. It also identifies four basic tasks; support forces in contact, support the commander's battle plan, synchronize fire support, and sustain fire support[2]. It does not, however, focus in on any particular type of operation. The corps and division level tactics, techniques, and procedures volume, FM 6-20-30, Fire Support at Corps and Division, is a great improvement over the older FM 6-20-2J. Included is discussion of fire support for "encircled forces" as well as for retrograde

operations, passage of lines, and river crossing operations. As thorough as these discussions are, no mention is made of fire support in the reduction of an encircled enemy force.[3] As was pointed out in the preceding chapter, there is little functional difference in reducing a systematically encircled enemy force, and reducing an enemy force you have cut off in your rear. Reducing an encircled enemy force may be a task we are more likely to face as a result of attempts to counter enemy offensive actions than as a result of operational level offensive actions of our own. It is a mission we need to be prepared to execute.

It has been argued that the mission of the artillery is to support the maneuver commanders operation, and that attempts to prescribe a doctrinal technique for reduction of an encircled enemy will likely fall short of meeting the specific needs of the supported commander.[4] The factors of METT-T, as well as the personality of the maneuver commander, will certainly effect any operation. However, as the fire support coordinator strives to provide fires to the forces in contact, support the commander's battle plan, synchronize fire support, and sustain fire support, there are "fire support considerations" to reducing an encircled enemy to guide on, just as there are to the breakout and relief of an encircled friendly force or to a river crossing operation. FM 6-20-30 should spell out the fire support considerations for reducing an encircled enemy to the same level of detail it spells out the fire support considerations for other situations.

FIRE SUPPORT CONSIDERATIONS IN THE REDUCTION OF AN ENCIRCLED ENEMY

Artillery is the main means for destroying encircled enemy tactical formations and for supporting the attack of ground forces. It relies on cooperation with aviation to complete the destruction of enemy chemical and nuclear capabilities quickly, before they can be employed. While the presence of nuclear weapons on the battlefield is a reality we cannot assume away, what the U.S. considers a "tactical" nuclear weapon may be considered a "strategic" nuclear weapon by our European allies, depending on where it is detonated. Similarly, Soviet reaction to our use of a low yield limited range "tactical" nuclear weapon must be factored into our decision making process. While the blurry line separating us, the encircling force, from our encircled enemy could preclude our consideration of the nuclear option entirely, a trapped enemy may not react in a predictable manner. The employment of nuclear weapons in a breakout attempt is a threat we must be prepared to counter.

Attempts by the encircled enemy to counterattack and breakout must be foreseen during the planning phase of the encirclement operation. Fire support must be closely tied to the intelligence preparation of the battlefield (IPB) process. Systematic strikes by aviation and massed fires of artillery on identified axes and assembly areas is essential. Enemy command and control systems must be attacked to reduce the ability to establish a defensive position or to organize for a breakout. Electronic warfare and artillery can effectively be used to disrupt and destroy these systems.

It's not simply good enough to think about what must be done. How the artillery will support the reduction of an encircled force must be worked out now to be successful later. Soviet success in Operation BAGRATION was due largely to focusing on the desired outcome throughout planning at all levels. Centralized planning coupled with systematic "scientific" norms was typical of artillery planning and linked each phase of the operation. Large artillery reserves were rapidly formed into functional groups tailored to accompany the maneuver forces. With massive amounts of munitions, these were initially massed for the breakthrough, then shifted as necessary. During the reduction, artillery, with close air support, bottled up, and eventually, destroyed the encircled Germans, freeing masses of armor and mechanized infantry to exploit the successful breakthrough.

Today's U.S. artillery doctrine, though much more complete than in the past, still fails to address the issue of the artillery's role in dealing with bypassed and encircled forces. We need to heed some of the lessons we can learn from our past so that we do not repeat the same mistakes. We know we can not win by constantly reacting to the enemy's initiative. Adoption of an active approach to fire support coordination and employment of artillery assets during large scale operations such as the encirclement of division and larger sized groupments is long overdue.

We are not alone with these concerns. The Soviets may still experience some problems in translating the "what" of their strategic and operational objectives into tactical "how," but they have more practice than we. It would be wrong for us to simply try to adopt Soviet artillery doctrine and organization. Political and ideological differences aside, the Soviets have an established appreciation for large-scale operations over

vast terrain based on a wealth of historical experience. We should not seek to duplicate their military operational system. But, we should attempt to cull the doctrinal and organizational principles applicable to our operational concepts and commitments. We can learn much and gain powerful insights by considering the implications of their systematic historically based "norms" approach to planning fire support.

In terms of the five categories for analysis, the fire support coordinator (FSCOORD):

Provides adequate fire support for committed combat units. While units in direct support are most responsive, a large scale encirclement operation dictates use of general support/reinforcing units. When a corps reduction effort is tagged a rear operation and assigned to the deputy corps commander and a tactical combat force (TCF), heavy augmentation by corps artillery is called for.

Weights the main effort. In a reduction effort, this will depend on the method of reduction. Assigning reinforcing missions to a corps artillery unit provides more responsive fires to the committed maneuver command as may be needed when a divide-and-conquer technique is applied to "reduction by fire and maneuver." General support missions are more appropriate for a "reduction by fire" approach. General support reinforcing missions are appropriate when some other approach between is taken. Allocation of ammunition by type within the corps will need to recognize the added requirements when fires are substituted for maneuver in a reduction.

Facilitates future operations. Frequent moves by firing artillery units are crucial for the survivability of artillery on the battlefield. Army

war-gaming studies conclude that in a prepared defense, if the battery moves only two or three times a day, no more than two howitzers out of eight in a battery will be operational after sixteen hours due to counterfire.[5] Counter-battery fires are a very real part of any artillery operation. To facilitate future operations, we must take these into consideration. Assignment of on-order missions allows artillery units to begin planning for anticipated future needs and allows smooth transition from one phase of the operation to the next.

Retains immediately available fire support assets for the commander to influence the action. Assigning direct support and reinforcing missions, though called for to satisfy the first two considerations, degrades responsiveness to the overall force commander. Again, the general support reinforcing mission, if used correctly, will help to bridge this divergence.

Establishes maximum feasible centralized control. Though a lesser degree of centralized control is needed in offensive situations than in defensive situations, the reduction of an encirclement is at once both offensive and defensive in nature. Wise positioning and continuous coordination decisions are called for to centrally manage and fully take advantage of all available fire support assets during such an operation.

Critical fire support tasks in the reduction of an encircled enemy are shown in Figure 8-1.

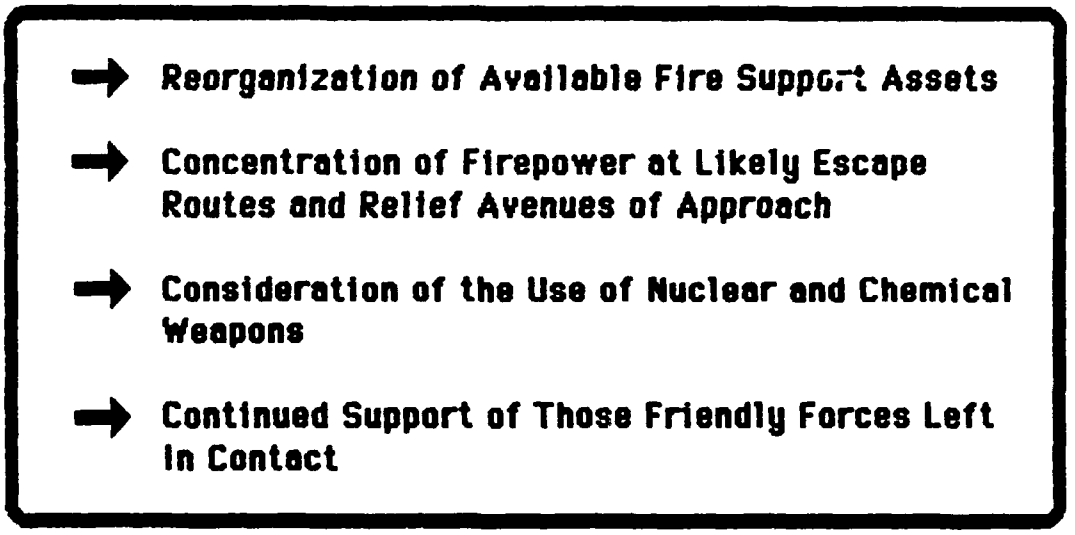

Figure 8-1 Fire Support Tasks of a Reduction Mission

At army level, the doctrine must include joint mission analysis by fire support coordination agencies. Soviet air operations during Operation BAGRATION are worthy of special note. Not only were these massive formations extremely effective, but a directed effort was made to assign specific missions to the air forces--such as fixing tactical reserves and attacking second echelon defensive positions--instead of simply designating specific targets. Changing from simply targeting to mission-type orders calls for an army level fire support coordination element manned by air force controllers and field artillerymen. A fire support reserve takes on added importance during such large-scale operations. There will be no physical massing of large artillery groups on the AirLand Battlefield; modern smart munitions and the nuclear threat have eliminated these forever. Semi-autonomous operations as demonstrated under the Howitzer Improvement Program (HIP) offer exciting possibilities in the near future. Whenever possible, inexpensive artillery assets should be substituted for more costly men and tanks. Fire support reserves used

correctly can free large maneuver forces from the task of containing and/or reducing a cutoff and encircled, yet still strong, enemy force. During Operation BAGRATION, once the encirclement had been formed, the Soviets only engaged 25% of their troops in destroying the encircled Germans.[6] But, approximately 75% of their artillery was devoted to this task.[7] We can't afford to attempt to execute such an operation with hastily prepared orders while task organizing on the fly.

IS THE FIELD ARTILLERY PREPARED TO SUPPORT THE REDUCTION OF AN ENCIRCLED ENEMY?

We must train for the missions we expect to be given by the national command authority. As pointed out by John O. Marsh, Jr., former Secretary of the Army, the most important of these would be the defeat of the Warsaw Pact while maintaining the territorial integrity of NATO.[8]

Encirclement operations are only briefly touched upon in our doctrinal manuals. These discussions deal more with breaking out from an encirclement than with forming one. The details of "how" to encircle and reduce an enemy are unwritten, and consequently, not in our training.[9] The forward deployed corps artillery commanders in Europe do not consider this to be a problem. They answer the question "Is the field artillery prepared to support the reduction of an encircled enemy?" - "yes." I submit that although the "doing" of some component parts of the artillery aspect of this operation may be doctrinally established, tying together these pieces into a synergetic package requires innovative attention. So while the answer may be "yes," we remain untrained and unpracticed in this operation. Rehearsal of fire support plans for execution of such a mission would identify many

areas needing improvement. We cannot deceive ourselves any longer by thinking that such a complex operation as this can be dealt with on an ad hoc basis. We must learn all we can from our past mistakes. An ad hoc approach did not succeed at Falaise and it won't succeed today. The process of reducing a large encircled enemy force is sufficiently different from other operations that it should be specifically addressed separately.

We need to change our orientation from breakout operations to encircling and reducing an enemy force. Some argue that we are more likely to become encircled than we are to encircle a large enemy force. Yet, we talk "deep operations" without coming to grips with how to treat the bypassed, pocketed enemies that will develop. We need to be proficient at dealing with encirclements as part of "rear operations" as well. This is one way we may be able to counter the variety of forces that the Soviets have planned for, trained, and expect to employ against our rear area. And, as mentioned in Chapter 7, in a NATO versus Warsaw Pact war, annihilation of division-sized invading forces will be more a key to success than attempts to conduct an offensive encirclement. Whether it is agreed or not that we need to develop the doctrine, tactics, and techniques to conduct a large-scale encirclement, it should be accepted that we need to clearly address the reduction of a large encircled enemy force.

We cannot continue to ignore the unique fire support aspects of an encirclement operation. It is not good enough to fall back on our basic tenet that the field artillery supports the maneuver commander. True, an encirclement operation, and the reduction of an encircled enemy specifically, can be broken down into its component parts, each of which may be adequately addressed by current artillery doctrine and tactics. But,

the orchestration and synchronization of each component part of each step of an encirclement operation calls for a well thought out sequence of field artillery operations focused on the desired result; elimination of an enemy formation.

Having successfully encircled a large enemy formation, the commander can choose to reduce the enemy by fire and maneuver or by fire alone. Reduction by fire and maneuver is very costly in men, material, and time. Reduction by fire alone, on the other hand, is very costly in material and time, but saves men. In an encirclement, the continued exploitation and pursuit deeper into enemy territory will usually take on the importance of the main effort while the reduction of an encircled enemy force is relegated to a secondary effort. The contributions of the field artillery can still be great. However, the question remains whether there is enough artillery power in the present force structure to accomplish both tasks simultaneously. Since this study began with the assumption that existing field artillery force structure will stay fixed in the near future, the best employment of available artillery assets becomes paramount. Corps artillery headquarters must get used to the idea of possibly retaining some tube artillery assets for use in a reduction effort. Less "reinforcing" and more "general support reinforcing" artillery missions should become the rule.

The Soviet Belorussian offensive in the Summer of 1944 achieved near complete surprise over the Germans. In seventeen days, the four participating fronts destroyed twenty-eight German divisions after smashing through along a 750 kilometer front. It makes one pause to think when this operation is examined today. In 1984 there were twenty-eight

NATO divisions in Western Europe along the approximately 750 kilometer Inter-German Border (IGB).[10] Unfortunately, there are some in the Army who feel that doctrine is fine for people at Fort Leavenworth and Carlisle Barracks, but that the American soldier can put rounds down range and be victorious against any foe just by applying good leadership and a little common sense. That is a sure road to disaster.

FUTURE INVESTIGATION

In this study, senior artillery commanders were questioned about the adequacy of current artillery doctrine and training to support the destruction of an encircled force. In large, a return to basics fall-back position of "supporting the maneuver commander's scheme" was taken. It is true that the reduction of an encircled force can be broken down into basic maneuver elements, each of which can be addressed by existing artillery doctrine and tactics. But, how well are we prepared to address the operation as a whole? With the increased attention being paid to large scaled encirclement, this failure to address the issue in artillery doctrine is embarrassing. In a future questionnaire it might prove interesting to solicit the candid opinions of division and corps commanders on the question of how well they feel their fire support coordinators can provide innovative recommendations on possible use of fire support in this difficult mission.

The questionnaire used in this study devoted considerable detail to the events leading up to the forming of a large scale encirclement. Few directives for the reduction of the encirclement were straight forward. This was by design. One of the responses stated that an encirclement operation was not clearly apparent in the scenario presented. Therefore,

creation and circulation of a new questionnaire which includes more specific guidance and a draft order for the reduction should force other fire support issues to surface.

OBSERVATIONS

As cited in the previous chapter, many in our Army take comfort in the reality of our global responsibilities and fiscal constraints when stating our limited existing doctrine and tactics for reducing an encircled enemy is wholly adequate. This is the same attitude that prevailed in the 1930's during a period of similar circumstances. Adoption of any doctrine through tactics and techniques must, of course, be tempered by available resources. But, the development of doctrine for war, as in such fields as medicine and engineering, must assume adequate resources. Only then will we know what to aim for when we apply limited assets.

Similarly, reliance on the maneuver commanders and application of common sense has long been a fall back position when a fire supporter faced a difficult task not expressly addressed in the manuals. We can not dismiss the need for doctrine. It is against the doctrinal and tactical base-line that the factors of METT-T are applied in supporting the maneuver commander. The rapid pace and high stakes of large-scaled combat require patent solutions to such problems as converging unit boundaries, establishment of fire support coordination measures, and differentiation among indirectly acquired friendly and enemy targets. These problems, and others, will occur during encirclement and reduction operations. Many of the same problems the artillery has faced since the development of indirect fire continue to plague us today. Under the conditions of the AirLand Battlefield, these

problems become increasingly complicated. One lesson that stands out is that we should only attack a fire support problem on an ad hoc basis when absolutely necessary. There is no substitute for well developed doctrine, tactics, techniques and procedures for reducing a large encircled enemy.

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[1]FM 100-15, Corps Operations (Final Draft) (Fort Leavenworth, KS: US Army CGSC, 1988), pp. 7-16 thru 7-27.

[2]FM 6-20, Fire Support in the AirLand Battle (Washington, DC: HQ Department of the Army, 1988), p. 1-3.

[3]FM 6-20-30, Fire Support at Corps and Division (Coordinating Draft) (Fort Sill, OK: U.S. Army Field Artillery School, 1988), pp. 6-9 thru 6-11.

[4]Louis J. Del Rosso, VII Corps Artillery Commander, in his letter, SUBJECT: Field Artillery Support During Encirclement Operations dated 18 November 1988, his response to the questionnaire at Annex A.

[5]Raphael J. Hallada, "On The Move," Field Artillery Journal (October 1988), p. 1.

[6]S. V. Shtrik, "The Encirclement and Destruction of the Enemy During Combat Operations Not Involving the Use of Nuclear Weapons," Voyennaya Mysl (January 1968), p. 284.

[7]COL David Glantz, Deputy Director of the Soviet Army Studies Office, interview by author, Fort Leavenworth, KS, 26 January 1989.

[8]John O. Marsh, Jr, "Army Training: Ancient Roots, Future Benefits," ARMY (October 1988), pp. 12-18.

[9]Michael H. Vernon, "Encirclement Operations," Military Review (September 1986), p. 15.

[10]Gerd Niepold, Battle for White Russia (Brassey's Defense Publishers), 1987, p. xi.

APPENDIX A

AIRLAND TERMINOLOGY

OPERATIONAL DEFINITIONS

air interdiction - "Air interdiction (AI) operations delay, disrupt, divert, or destroy an enemy's military potential before it can be brought to bear effectively against friendly forces. ... AI attacks are usually executed against enemy surface forces, movement networks (including lines of communication), command, control, and communications networks, and combat supplies."(FM 100-5, Operations, p. 48)

assigned unit - An assigned unit has been placed in an organization on a permanent basis and is controlled and administered by the organization to which it is assigned for the primary function, or greater portion of its functions. (JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms, p. 38)

attached unit - An attached unit has been placed in an organization on a temporary basis, subject to limitations specified in an attachment order. (JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms , p. 40)

battle - "Battles consist of a series of related engagements...(and) involve larger forces -- divisions, corps, and armies." (FM 100-5, Operations, p. 10)

battlefield air interdiction - "Air interdiction attacks against targets which have a near term effect on the operations or scheme of maneuver of friendly forces, but are not in close proximity to friendly forces, are referred to as battlefield air interdiction (BAI)." (FM 100-5, Operations , p. 49)

bypassed forces - "... those forces maneuvered around or avoided by the attacker in order to maintain the momentum of the attack and avoid dissipating or diverting combat power prior to the final objective." (Joseph J. Angsten, Jr., "Bypassed Enemy Forces and the Corps Attack," Military Review, (January 1980), p. 70)

campaign - "A campaign is a series of joint actions designed to attain a strategic objective in a theater." (FM 100-5, Operations , p. 10)

close air support - "Close air support missions support land operations by attacking hostile targets in close proximity to friendly surface forces." (FM 100-5, Operations, p. 49)

combined doctrine - "Fundamental principles that guide the employment of forces of two or more nations in coordinated action toward a common objective." (JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms, p. 76)

combined operation - "An operation conducted by forces of two or more allied nations acting together for the accomplishment of a single mission." (JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms, p. 76)

doctrine - "Fundamental principles by which the military forces guide their actions in support of objectives. It is authoritative but requires judgment in application." (JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms, p. 118) Doctrine is relatively timeless.

- "An army's fundamental doctrine is the condensed expression of its approach to fighting campaigns, major operations, battles, and engagements." (FM 100-5, Operations, p. 6)

encirclement - Encirclement is "the isolation of a particular grouping of the enemy from the rest of of his forces with the purpose of annihilation or destruction." (Viktor Antorovich Matsulenko, Encirclement Operations and Combat (From the USSR Report, translated by FBIS from MILITARY AFFAIRS, 31 January 1983), p. 2) It can be deliberate or can develop as a result of another operation. Encirclement denies the encircled enemy force the capability to defend or attack in an organized manner by eliminating the enemy's freedom of maneuver.

engagement - "Engagements are small conflicts...of a few hours' duration fought between divisions and small forces." (FM 100-5, Operations, p. 10)

joint - "Connotes activities, operations, organizations, etc., in which elements of more than one service of the same nation participate." (JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms, p. 199)

joint doctrine - "Fundamental principles that guide the employment of forces of two or more Services of the same nation in coordinated action toward a common objective." (JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms, p. 200)

AIRLAND TERMINOLOGY

joint force - "... a force which is composed of ... elements of ... two or more Services of the same nation operating under a single commander." (JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms, p. 200)

operational art- "Operational art is the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations." (FM 100-5, Operations, p. 10)

major operation - "A major operation comprises the coordinated actions of large forces in a single phase of a campaign or in a critical battle." (FM 100-5, Operations, p. 10)

maneuver - "Maneuver is the movement of forces in relation to the enemy to secure or retain positional advantage. (FM 100-5, Operations, p 12)

procedures - "A procedure is a course or mode of action that describes how to perform a certain task. This is the lowest level of detail. Procedures deal with task level performance." (FM 7-72, Light Infantry Battalion, p. 2-15)

reduction (destruction/neutralization) - "Destruction puts a target out of action permanently. Neutralization knocks a target out of action temporarily." (FM 6-20, Fire Support in the AirLand Battle, p. 2-7)

restrictive fire line (RFL) - "A line established between converging friendly forces (one or both may be moving) that prohibits fires or effects from fires across the line without coordination with the affected force. It is established by the commander of the converging forces." (FM 101-5-1, Operational Terms and Symbols, p. 1-62)

tactics - Tactics "is the art by which corps and smaller unit commanders translate potential combat power into victorious battles and engagements." (FM 100-5, Operations, p. 10)

- Tactics are different from doctrine by adds to doctrine. Tactics are the ordered placement and maneuver of units in respect to each other and to the enemy in order to use them to best advantage. (FM 7-72, Light Infantry Battalion, p. 2-14)

Techniques - Techniques are the level of detail just below "tactics" which detail the basic method of using equipment and personnel. (FM 7-72, Light Infantry Battalion, p. 2-14)

APPENDIX B

MAILOUT QUESTIONNAIRE

QUESTIONNAIRE - Field Artillery in the Encirclement

1. Do you feel that **current** field artillery **doctrine** as expressed in Chapter 6 of FM 6-20-30, Fire Support at Corps and Division (MAR 88), or in Chapter 7 of FM 100-15, Corps Operations (JAN 88),is **adequate** to support the destruction of an encircled enemy force?

(YES) (NO)

If **YES**, why?

If **NO**, what specific new doctrine do you feel is needed?

2. Do you feel **current** field artillery **training** as expressed in the ARTEP 6-300(-1), Corps Field Artillery Section, Division Artillery, and Field Artillery Brigade (TACFIRE), is **adequate** to support the destruction of an encircled enemy force?

(YES) (NO)

If **YES**, what ARTEP tasks are best in training for this mission?

If **NO**, what do you recommend?

3. Have you ever been called upon to plan the fire support mission for the encirclement and reduction of an enemy division-sized force during a major training exercise FTX/CPX ?

(YES) (NO)

QUESTIONNAIRE - Field Artillery in the Encirclement

The **next seven questions** deal specifically with the **scenario of Encl 3**.

4. What **factors** do you consider the **most critical** when organizing the artillery for this mission?

5. What **task organizations** would be most successful? Why?

6. Converging unit boundaries during an encirclement operation create problems for maneuver commanders. What **fire support coordination measures** would be most useful during this operation? Why?

7. In support of the destruction of an encircled force, what would be the best **utilization** of

field artillery:

Army tactical missile system (A-TACMS):

close air:

attack helicopter:

and **electronic warfare** assets:

8. How would you control the fire support for the forward passage of lines, in the 71st ID zone, for the attack on OBJs EARL & KING?

9 How will your target acquisition radar differentiate between the threat artillery elements and the DS FA Bn in support of the brigade from the 71st MECH that seizes OBJ EARL or KING?

10. Is the TOE FA C^2 adequate for the Bde moving to seize OBJ EARL?

11. Do you have any additional comments, insight, observations or philosophies you feel may be germane to my thesis?

SCENARIO

a. This scenario provides an operational and tactical situation for examining the fire support means to support the encirclement and destruction of an enemy force. To encourage the desired discussion and avoid theater-unique issues, this exercise scenario is set in terrain unrelated to any contemporary general defense plan or contingency plan. Likewise, only US forces are considered. Threat forces, while representative, are not intended to portray any current real-world forces.

b. Extract from 1st Army Operation Plan (OPLAN GOLDEN HARVEST)

Situation.

(1) Enemy forces. 1st Army is opposed by the Osipov Front of the southwest TVD. The front is expected to conduct simultaneous attacks across the border to fix US forces from maneuvering to counteract the expected frontal main effort in the west; to penetrate US defenses encircling Kansas City, MO; and to continue their drive south into Oklahoma and Texas to seize Centralia's oil reserves. The Osipov Front is capable of shifting its second echelon army to reinforce the Ganyushkin Front. The Osipov Front attacked with four armies abreast in its first echelon, attempting to penetrate rapidly to achieve their goals (see Sketch 1 and 10th Corps Intelligence Estimate).

(2) Friendly forces: CENTUS defends with 19th Combined Joint Task Force (CJTF) in the west to defeat the first echelon armies of the Osipov Front.

1st Army Mission: Defend in sector to defeat the Osipov Front.

1st Army Commander's Intent: Do not permit enemy penetration of the east-west line created by the Smokey Hill, Kansas, and Missouri Rivers, to gain sufficient time to build combat power to permit a 1st Army offensive. The offensive will defeat the Osipov Front second-echelon tank army, cut enemy lines of communication (LOCs), and prevent the reallocation of Osipov Front forces to the Ganyushkin Front. Be prepared to continue the attack north in support of the CENTUS offense to restore the Centralia/USSR border.

1st Army Concept of Operations: (see Sketch 2) Defend with three corps abreast (4th, 10th, and 8th Corps) and one corps in reserve (11th Corps) to defeat the Osipov Front. On D+5, attack with the 11th Corps (Army

reserve), through the 10th Corps sector, to defeat the second-echelon army (25th Tank Army) of the Osipov Front. Main effort in the defense is 10th Corps and then shifts to 11th Corps for the 1st Army's offense. Nuclear release authority remains with the National Command Authority (NCA); chemical release authority is retained by 1st Army.

c. The time is 0800S on day D+4. You are the 11th Corps Artillery Commander.

(1) Situation: (see Sketches 3 and 4)

(a) During the last 2 days, the 10th (US) Corps has been engaged with elements of the 24th and 28th Combined Arms Armies. The 55th Inf Div (Mech) has successfully defended in zone and committed its reserve, at 1200S, D+2, against the lead MRR of the 46th MRD, 24th CAA. The attack was successful and the 24th CAA went into a hasty defense. There have been minor Soviet advances in the 55th Infantry Division's zone, but essentially the FLOT (forward line of own troops) has stabilized.

(b) As predicted, the Soviet forces committed his main effort in the 25th Armored Division zone. The 25th AD has been driven south of PL ORANGE (KANSAS River), forcing the division to commit its reserve at 1200S, D+2. The counterattack was partially successful, with the FLOT east of Topeka remaining on a line from Highway 4 to Perry Lake. West of Topeka, the leading MRRs of the 20th MRD and the 25th MRD crossed the Kansas River. The 28th CAA Commander has called his second echelon MRD, the 27th, forward to force a crossing of the Kansas River, east of Topeka. This force came into contact with the 25th AD forces at 0200S, D+3.

(c) The front commander has perceived success in the 28th CAA sector, and has reinforced this with another TD. SIGENT intercepts, confirmed by SLAR, indicate that he has reallocated the 50th TD, of the 24th CAA, to the 28th CAA. He has taken this step, because of the effects of the air interdiction (AI) campaign against the lead TD of the 25th TA. 1st (US) Army has placed all of its AI sorties, 130 per day, against the LOC infrastructure and the lead division has been forced to replace numerous bridges while enroute south. The 25th TA has been delayed 30 hours behind its original movement schedule.

(2) Plans: (see Sketch 5)

(a) The 10th (US) Corps will commit the 313th Separate Infantry Brigade (SIB) into the 25th AD's zone against the leading MRRs of the 27th MRD at 1800S, D+3. At the same time, it will commit the 6th Armored Brigade (Independent) against the salient south of the Kansas River and it will attack the leading TR of the 22nd GTD, 28th CAA, with the 10th (Corps) Avn Bde attacking the leading elements of the 50th GTD vic EA 7.

(b) Status of 11th Corps units: The 71st ID closed into AA MONK by 0600S, D+3. The 19th and 20th ADs began their move into AAs NUN and SPOON at 0200S, D+3. It is estimated that they will complete their movement NLT 1600S, D+3. The Corps G3 ordered the 429th SIB and the 210th ACR to commence their movement to AAs FORK and ROCK at 1900S, D+3. They completed this movement before dawn on D+4.

(c) 11th (US) Corps has received a FRAGO from 1st (US) Army ordering the corps to execute the counteroffensive at 0400S, D+5. All firing elements of the 11th Crops artillery have infiltrated into their assault firing positions, and they are to remain silent until the 11th Corps attack begins.

Extract from OPLAN 4-88 -- 11th (US) Corps

Copy No ___ of ___ copies
11th (US) Corps
TULSA, OK
0900S 15 August 1989

OPERATION PLAN (CORNHUSKER)

Reference: Maps, series USACGSC 50-301, KANSAS, sheet 1 (HOLTON--HORTON), edition 1977, 1:50,000 (map 1/13A (sheet 1 of 4)).

Series USACGSC 50-302, KANSAS-MISSOURI, sheet 1 (LEAVENWORTH--ST JOSEPH), edition 1977, 1:50,000 (map 1/13A (sheet 2 of 4)).

Series USACGSC 50-303, KANSAS, sheet 1 (TOPEKA--LAWRENCE), edition 1977, 1.50,000 (map 1/13A (sheet 3 of 4)).

Series USACGSC 50-304, KANSAS-MISSOURI, sheet 1 (LAWRENCE--OLATHE), edition 1977, 1:50,000 (map 1/13A (sheet 4 of 4)).

Time Zone used throughout the Plan: SIERRA.

Task Organization: Annex A (Task Organization)

1. SITUATION

a. Enemy Forces: (see Sketch 3)

* * * * * * * * * * *

b. Friendly Forces: (see Sketch 2)

(1) 1st Army defends to prevent enemy penetration of the MISSOURI, KANSAS, and SMOKEY HILL Rivers' east-west line and to gain sufficient combat power to permit an offensive with 11th (US) Corps to defeat the Osipov Front forward of PL PINK (NEBRASKA--KANSAS border),

cut enemy LOCs, and to put the 1st Army forces deep into enemy territory to continue the attack north to support CENTUS's defeat of the Southwest TVD.

(2) 4th (US) Corps in the west defends in sector.

(3) 1st (Centralian) Corps in the east defends in sector.

(4) 11th (US) Corps, vic TULSA, OK, 1st Army reserve.

(5) WAAF supports 19th CJTF.

c. Attachments and Detachments: Annex A (Task Organization).

d. Assumptions: (see Sketch 5)

(1) Threat forces will attempt to continue their attack into the CENTRALIA to seize oil production reserves in OKLAHOMA and TEXAS

(2) 10th (US) Corps will contain the enemy within their penetration south of the KANSAS River.

(3) 11th (US) Corps will have priority of movement on designated routes into and through the 10th (US) Corps area of operations.

(4) 1st (Centralia) Corps will prevent the enemy from crossing the MISSOURI River north of KANSAS CITY.

(5) WAAF will achieve and maintain air superiority over 11th (US) Corps movement routes during Phase I.

(6) Threat forces have the capability to use NBC weapons. They are not expected to use nuclear weapons in the initial assault, but they may use chemical weapons.

(7) Threat has the capability of achieving local air superiority, for limited periods, north of the KANSAS River.

(8) 1st Army's deception plan (Operation PATTON) will convince the front commander that the 11th (US) corps is being deployed in blocking positions to limit the penetration west of the Lawrence-4 lakes line.

Extract from OPLAN 4-88 -- 11th (US) Corps

2. MISSION

On order, 11th (US) Corps moves from assembly areas into the 10th (US) corps area; conducts offensive operations to defeat the 25th TA and complete destruction of the Osipov Front.

3. EXECUTION (see Sketch 6 and 1:50,000 map/overlay)

a. Concept of Operation. 11th (US) Corps movement from its assembly areas must be rapid and unimpeded. We must locate, encircle, and defeat any remnants of the 24th CAA which could interdict our movement north, after passing through the 55th ID. We must defeat the 25th TA before it can exploit the bridgehead across the KANSAS River.

(1) Maneuver:

(a) Phase I. Movement to Battle Handover. * * *

(b) Phase II. Encirclement and Movement to PL CHRIS.

1. The 71st ID (Mech) will attack in zone, to penetrate the forward elements of the 24th CAA, seize Objectives EARL and KING. On order, seize Objective DUKE with one TF.

2. The 429th SIB will attack in zone, penetrate the forward elements of the 24th CAA, seize Objectives QUEEN and DUKE.

3. 210th ACR, will attack in zone, penetrate the forward elements of the 24th CAA, seize Objective PRINCE and screen the right flank from the LD/LC to PL CHRIS. On order, cross PL CHRIS, move on Axes RUBY, OPAL, and GARNET to locate the lead division of the 25th TA.

4. 14th Avn Bde (CORPS) Reserve. Responsible for rear area level III threat. On order, defeat elements of the 46th MRD vic EAs 9, 10, and 11.

(c) Phase III. Movement to Contact and Defeat of 25th TA.

Extract from OPLAN 4-88 -- 11th (US) Corps

1. 210th ACR, movement along Axes RUBY, OPAL, and GARNETT to locate and engage the leading division of the 25th TA (West of PL RINGO).

2. 20th AD, main effort when committed past PL CHRIS. Move on identifies axis, defeat lead TD of the 25th TA.

3. 19th AD, follow and support 20th AD; on order, defeat follow-on TD of 25th TA.

4. 71st ID, complete destruction of encircled forces (24th CAA). On order, occupy blocking positions protecting southern flank of the corps between PL CHRIS and PL RINGO.

5. 429th SIB, corps reserve.

6. 14th Avn Bde (Corps). Priority of effort in support of 20th AD, 19th AD, 71st ID, in order. On order, attack 25th GMRD, 28th CAA forces vic EAs 1 and 2. On order, attack 25th TA forces vic EA 8.

(2) Fires. ***(What do you recommend for Phase II ? for Phase III?)***

(3) Counterair Operations. * * *

(4) Intelligence. Priority of intelligence collection is to discovering when and where uncommitted regiments and divisions will be committed; and to locating RAGs, DAGs, SSMs, and attack helicopter staging areas.

(5) Electronic Warfare. * * *

(6) Concept of Logistic Support. * * *

(7) Deception. * * *

b. Tasks to Maneuver Units. * * *

c. Tasks to Combat Support Units.

(1) Fire Support. ***(What do you recommend?)***

Extract from OPLAN 4-88 -- 11th (US) Corps

(a) Air Support.

1. 11th (US) Corps maintains control of all BAI allocations and expects 38 BAI sorties through D+6.

2. Initial distribution of close air support (CAS) is as follows:

Phase I:

--19th AD	__ sorties
--20th AD	__ sorties
--71st ID(M)	__ sorties
--210th ACR	__ sorties
--429th SIB(M)	__ sorties
-- Corps Control	__ sorties
TOTAL	60 sorties

Phase II:

--19th AD	__ sorties
--20th AD	__ sorties
--71st ID(M)	__ sorties
--210th ACR	__ sorties
--429th SIB(M)	__ sorties
-- Corps Control	__ sorties
TOTAL	150 sorties

Phase III:

--19th AD	__ sorties
--20th AD	__ sorties
--71st ID(M)	__ sorties
--210 ACR	__ sorties
--429th SIB(M)	__ sorties
-- Corps Control	__ sorties
TOTAL	150 sorties

(b) Chemical Support. * * *

(c) Field Artillery Support.

1. General. * * *

2. Organization for Combat -- (Task Organization)

(d) Nuclear Support. * * *

(e) Fire Support Coordination Instructions. * * *

* * * * * * * * * * *

d. Coordinating Instructions.

(1) PIR.

(a) Threat intentions and location of main effort.

(b) When and where will threat use NBC weapons?

(c) When and where will threat second-echelon army be committed?

(d) What are locations of threat nuclear delivery means and C^2?

* * * * * * * * * * *

4. SERVICE SUPPORT

a. Material and Services.

(1) Unit stockages per tactical SOP. * * *

* * * * * * * * * * *

(5) Controlled supply rate (CSR) expected for duration.

Extract from OPLAN 4-88 -- 11th (US) Corps

1320-D562	155-mm (DP-ICM)	15
1315-C521	105-mm Tank APDS	11
1410-HB01	TOW (ground)	2

(a) Other calibers/types--CSR equals RSR

(b) Units authorized to predraw 1 day CSR from ASP.

* * * * * * * * * * *

Acknowledge.

GRANT
LTG
Commanding

OFFICIAL:
/s/Sherman
SHERMAN
G3

Annexes: A--Task Organization
B--Sketches
C--Intelligence (TBP-see 10th (US) Corps Intel Estimate)
D--Operation Overlay
E--Fire Support ***(What do you recommend?)***

ANNEX A (TASK ORGANIZATION) (EXTRACT) TO OPLAN 4-87 (CORNHUSKER)--
11TH (US) Corps

PHASE I (H-HOUR, D-DAY, TO 0400, D+5)

TYPE	19th AD	20th AD	71st ID(M)	429th SIB	210th ACR	Corps Trps
AVN				214TH ATK HEL BN (OPCON)		14TH BDE(-)
FA			38TH FA BDE (OPCON) 1/A/460TH TAB (OPCON)	40TH FA BDE (OPCON) 2/A/406TH TAB (OPCON) A/635TH (MLRS)		CORPS ARTY 39TH FA BDE(GS) 41ST FA BDE(-X(GS) 460TH TAB(-) (GS)
ADA			1-301ST (CHAP) GS	2-301ST(-) (CHAP) GS	B/2-301ST (CHAP)	14TH ADA BDE(-)
CM			307TH SMK GEN CO (MTR)	306TH SMK GEN CO (MTR)		14TH CML BDE(-)
EN			310TH EN CBT BN (CORPS) 3101ST ASLT FLTBRG CO (RIBBON)	311TH EN CBT BN (CORPS) 3111TH ASLT FLTBRG CO (RIBBON)		14TH EN BDE(-)
MI		3/C/371ST MI BN (CEWI) (TAC XPLT)	1/C/371ST MI BN (CEWI) (TAC XPLT)	2/C/371ST MI BN (CEWI) (TAC XPLT)		14TH MI BDE(-)
MP	384TH MP CO	386TH MP CO	380TH MP BN (-)	379TH MP BN (-)	374TH MP CO	14TH MP BDE(-)
SIG						14TH SIG BDE(-)
OTHERS						721ST SEP AA BDE 329TH PSYOP BN 1115TH RACC

ANNEX A (TASK ORGANIZATION) (EXTRACT) TO OPLAN 4-87 (CORNHUSKER)--
11TH (US) Corps

PHASE II (0400, D+5 TO 1200 D+6)

TYPE	19th AD	20th AD	71st ID(M)	429th SIB	210th ACR	Corps Trps
AVN				214TH ATK HEL BN (OPCON)		14TH AVN BDE(-)
FA			38TH FA BDE (OPCON) 1/A/460TH TAB B/635TH MLRS	40TH FA BDE (OPCON) 2/A/460TH TAB A/635TH MLRS	379TH FA (DS)	CORPS ARTY 39TH FA BDE(GS) 41ST FA BDE(-) (GS) 460TH TAB(-) (GS) 66TH FA BDE(GS)
ADA	1-302ND (CHAP) GS	2-302ND (CHAP) GS	1-301ST (CHAP) GS	2-301ST (CHAP) GS		14TH ADA BDE(-)
CM		B/729TH CML CO (DECON)	307TH SMK GEN CO(MTR) 729TH CM BN (-) (DECON)	306TH SMK GEN CO(MTR) A/729TH CML CO (DECON)		14TH CML BDE(-)
EN			310TH EN CBT BN (CORPS) 3101ST ASLT FLTBRG CO (RIBBON)	311TH EN CBT BN (CORPS) 3111ST ASLT FLTBRG CO (RIBBON)		14TH EN BDE(-)
MI		3/C/371ST MI BN (CEWI) (TAC XPLT)	1/C/371ST MI BN (CEWI) (TAC XPLT)	2/C/371ST MI BN (CEWI) (TAC XPLT)		14TH MI BDE(-)
MP	384TH MP CO	386TH MP CO	380TH MP BN (-)	379TH MP BN (-)	374TH MP CO	14TH MP BDE(-)
SIG						14TH SIG BDE
OTHERS		A/721ST SEP AA BDE		1-4TH AR		721ST SEP AA BDE(-) 329TH PSYOP BN 1115TH RAOC

ANNEX A (TASK ORGANIZATION) (EXTRACT) TO OPLAN 4-87 (CORNHUSKER)--
11TH (US) Corps

PHASE III (1200, D+6 TO _____)

TYPE	19th AD	20th AD	71st ID(M)	429th SIB	210th ACR	Corps Trps
AVN		107TH ATK HEL GP (OPCON)			214TH ATK HEL BN (OPCON)	14TH AVN BDE(-)
FA	66TH FA BDE (R) 19TH AD DIVARTY	39TH FA BDE (OPCON) B/460TH TAB	38TH FA BDE (OPCON)	40TH FA BDE (OPCON) 2/A/460TH (R) 40TH FA BDE	379TH FA (DS) 2-446TH FA (R) 379TH	CORPS ARTY 41ST FA BDE(-) (GS) 460TH TAB(-) (GS)
	A/1/635TH MLRS (R) 19TH AD DIVARTY 1/A/460TH TAB	B/2/635TH MLRS	2/635TH MLRS(-) (R) 38TH FA BDE	A/2/635TH MLRS		
ADA		2-301ST (CHAP) GS	1-301ST (CHAP) GS			14TH ADA BDE(-)
CM		B/729TH CML CO (DECON) 307TH SMK GEN CO (MTR)	729TH CM(-) (DECON)	A/729TH CML CO (DECON)		14TH CML BDE(-)
EN		80TH EN GP (DS)	310TH EN CBT BN (CORPS)	311TH EN CBT BN (CORPS)		14TH EN BDE(-) 79TH EN GP(-)GS
MI		3/C/371ST BN (CEWI) (TAC XPLT)	2/C/371ST BN (CEWI) (TAC XPLT)	1/C/371ST BN (CEWI) (TAC XPLT)		14TH MI BDE(-)
MP	384TH MP CO	386TH MP CO	380TH MP BN(-)	379TH MP BN(-)		14TH MP BDE(-)
SIG						14TH SIG BDE(-)
OTHERS		A/721ST SEP AA BDE		721ST SEP BDE(-) (OPCON)		329TH PSYOP BN 1115TH RAOC

TAB A (TROOP LIST) TO ANNEX A (TASK ORGANIZATION) TO OPLAN 4-87 (CORNHUSKER)--11th (US) Corps

11th (US) Corps Troop List

1. 19th AD

1ST BDE HQ
- 1-17TH MECH
- 1-4 AR
- 1-5 AR

2ND BDE HQ
- 2-17 MECH
- 2-4 AR
- 1-6 AR

3RD BDE HQ
- 1-100 MECH
- 1-101 MECH
- 3-4 AR
- 2-6 AR

19TH AVN BDE HQ
- 203 ATK HEL BN (AH-1)
- 204 ATK HEL BN (AH-1)
- 19 ASLT HEL CO (UH-1)
- 19 CMD AVN CO

3-22 CAV HQ
- TRPS A & B (6TH) (M3)
- TRPS C & D (AIR) (AH-1)
- LRS DET

19TH AD DIVARTY HQ
- 1-19 (155, SP) FA (1ST BDE)
- 2-19 (155, SP) FA (2ND BDE)
- 3-19 (155, SP) FA (3RD BDE)
- 19 MLRS BTRY
- 19 TAB

1-997 ADA
- HHB (STINGER PLT)
- BTRYS A-C (GUN/STINGER)

19TH CML CO HQ
- 1ST-4TH PLTS (DECON)
- 5TH PLT (SMK)
- 6TH PLT (RECON)

19TH EN BN HQ
- CO A (1ST BDE)
- CO B (2ND BDE)
- CO C (3RD BDE)
- CO D
- CO E (BRG) (RIBBON)

19TH MI BN (CEWI)
- HH&S CO
- CO A (C & J)
- CO B (INTER/SURVL)
- CO C (EW)

19TH MP BN

19TH SIG BN

19TH AD DISCOM HQ
- MMC
- 19 TAMC
- 1-3 FSB

TAB A (TROOP LIST) TO ANNEX A (TASK ORGANIZATION) TO OPLAN 4-87 (CORNHUSKER)--11th (US) Corps

2. 20TH AD

1ST BDE HQ
- 2-100 MECH
- 2-101 MECH
- 2-5 AR
- 3-6 AR

2ND BDE HQ
- 3-17 MECH
- 1-7 AR
- 2-7 AR

3RD BDE HQ
- 3-100 MECH
- 3-5 AR
- 3-7 AR

1-97TH CAV HQ
- TRPS A & B GND (M3)
- TRPS C & D (AIR) (AH-1)
- LRS DET

20TH AD DIVARTY HQ
- 1-20 (155, SP) FA (1ST BDE)
- 2-20 (155, SP) FA (2ND BDE)
- 3-20 (155, SP) FA (3RD BDE)
- 20TH MLRS BTRY
- 20TH TAB

1-998 ADA
- HHB (STINGER PLT)
- BTRYS A-C (GUN/STINGER)

20TH CML CO

20TH EN BN

20TH MI BN (CEWI)

20TH MP BN

20TH SIG BN

20TH AD DISCOM HQ
- MMC
- 20TH TAMC
- 20TH MSB
- 1-3 FSB

TAB A (TROOP LIST) TO ANNEX A (TASK ORGANIZATION) TO OPLAN 4-87 (CORNHUSKER)--11th (US) Corps

3. 71ST MECH DIV

1ST BDE HQ
1-497 MECH
1-498 MECH
1-500 AR

2ND BDE HQ
2-497 MECH
1-502 AR
2-500 AR

3RD BDE HQ
1-498 MECH
2-499 MECH
1-502 AR
2-502 AR

71ST AVN BDE HQ
200TH ATK HEL BN (AH-1)
201ST ATK HEL BN (AH-1)
71ST ASLT HEL CO (UH-60)
71ST CMD AVN CO

1-92 CAV HQ
TRPS A & B (GND) (M3)
TRPS C & D (AIR) (AH-1)
LRS DET

71ST MECH DIVARTY HQ
1-71 (155, SP) FA
2-71 (155, SP) FA
3-71 (155, SP) FA
71ST MLRS BTRY
71ST TAB
2-997 ADA

71ST CML CO

71ST EN BN

71ST MI BN (CEWI)

71ST MP CO

71ST SIG BN

71ST MECH DISCOM HQ
MMC
71ST TAMC
1-3 FSB

4. 429TH SEPARATE INF BDE (MECH)

3-497 MECH

2-498 MECH

2-501 AR

3-502 AR

CO A 3-31 CAV

1-30 (155, SP) FA

ADA PLT/HHC 429TH SEP MECH BDE (STINGER)

DECON PLT

429TH EN CO

429TH MI CO

MP PLT/HHC 429TH SEP MECH BDE

429TH SPT BN HQ
CO A (MED)
CO B (S&T)
CO C (MAINT)

TAB A (TROOP LIST) TO ANNEX A (TASK ORGANIZATION) TO OPLAN 4-87 (CORNHUSKER)--11th (US) Corps

5. 210TH ACR

1-210TH ACR

2-210TH ACR

3-210TH ACR

210TH REGT CBT AVN SQDN HQ
TRPS A-C (AIR CAV) (AH-1)
CO D&E (ATK HEL) (AH-1)
CO F (ASLT HEL) (UH-1)

210TH ADA BTRY
(GUN/STINGER)

210TH CML CO

210TH EN CO

210TH MI CO

210TH SPT SQDN
TRP A (S&T)
TRP B (MAINT)
TRP C (MED)
TRP D (AG)

6. 14TH AVN BDE (CORPS)

107TH ATK HEL GP HQ
371ST ATK HEL BN (AH 64)
372ND ATK HEL BN (AH 64)
373RD ATK HEL BN (AH 64)

108TH ATK HEL GP HQ
214TH ATK HEL BN (AH 64)
215TH ATK HEL BN (AH 64)
216TH ATK HEL BN (AH 64)

109TH AVN GP HQ
461ST ASLT HEL BN (UH 60)
462ND ASLT HEL BN (UH 60)
177 MDM LIFT HEL BN (CH 47)
178 MDM LIFT HEL BN (CH 47)
726TH CMD AVN BN

7. 11TH CORPS ARTY

38TH FA BDE HQ
1-444 (203, SP) FA
1-445 (203, SP) FA
1-544 (155, SP) FA
2-544 (155, SP) FA
1-546 (155, SP) FA

39TH FA BDE HQ
2-445 (203, SP) FA
1-446 (203, SP) FA
1-545 (155, SP) FA
2-545 (155, SP) FA
2-546 (155, SP) FA

40TH FA BDE HQ
2-444 (203, SP) FA
3-544 (155, SP) FA
4-544 (155, SP) FA
3-545 (155, SP) FA
3-546 (155, SP) FA

41ST FA BDE HQ
1-999 (LANCE) FA
2-999 (LANCE) FA
1-635 (MLRS) FA
2-635 (MLRS) FA
2-446 (203, SP) FA
3-446 (203, SP) FA

406TH TAB (HV CORPS)
HHS
BTRYS A-C (RPV)
BTRY D (TGT ACQ)

8. 14TH ADA BDE * * *

9. 14TH CML BDE * * *

TAB A (TROOP LIST) TO ANNEX A (TASK ORGANIZATION) TO OPLAN 4-87 (CORNHUSKER)--11th (US) Corps

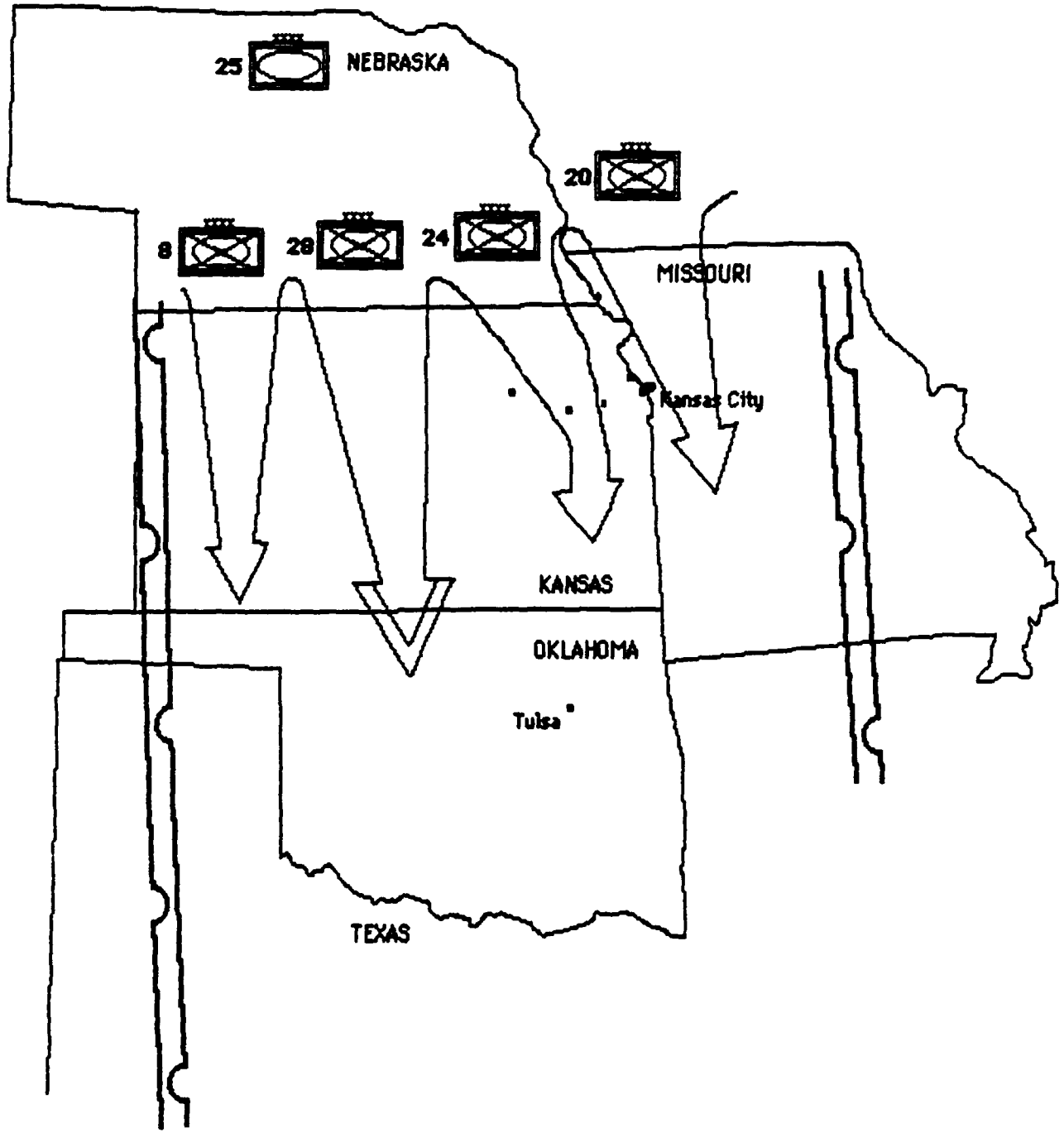
10. 14TH EN BDE * * *

11. 144TH MI BDE (CEWI)
    210 MI BN (CEWI) (AERIAL XPLT)
    371 MI BN (CEWI) (TAC XPLT)
    221 MI BN (CEWI) (OP)
    251 LRSC (OPCON)

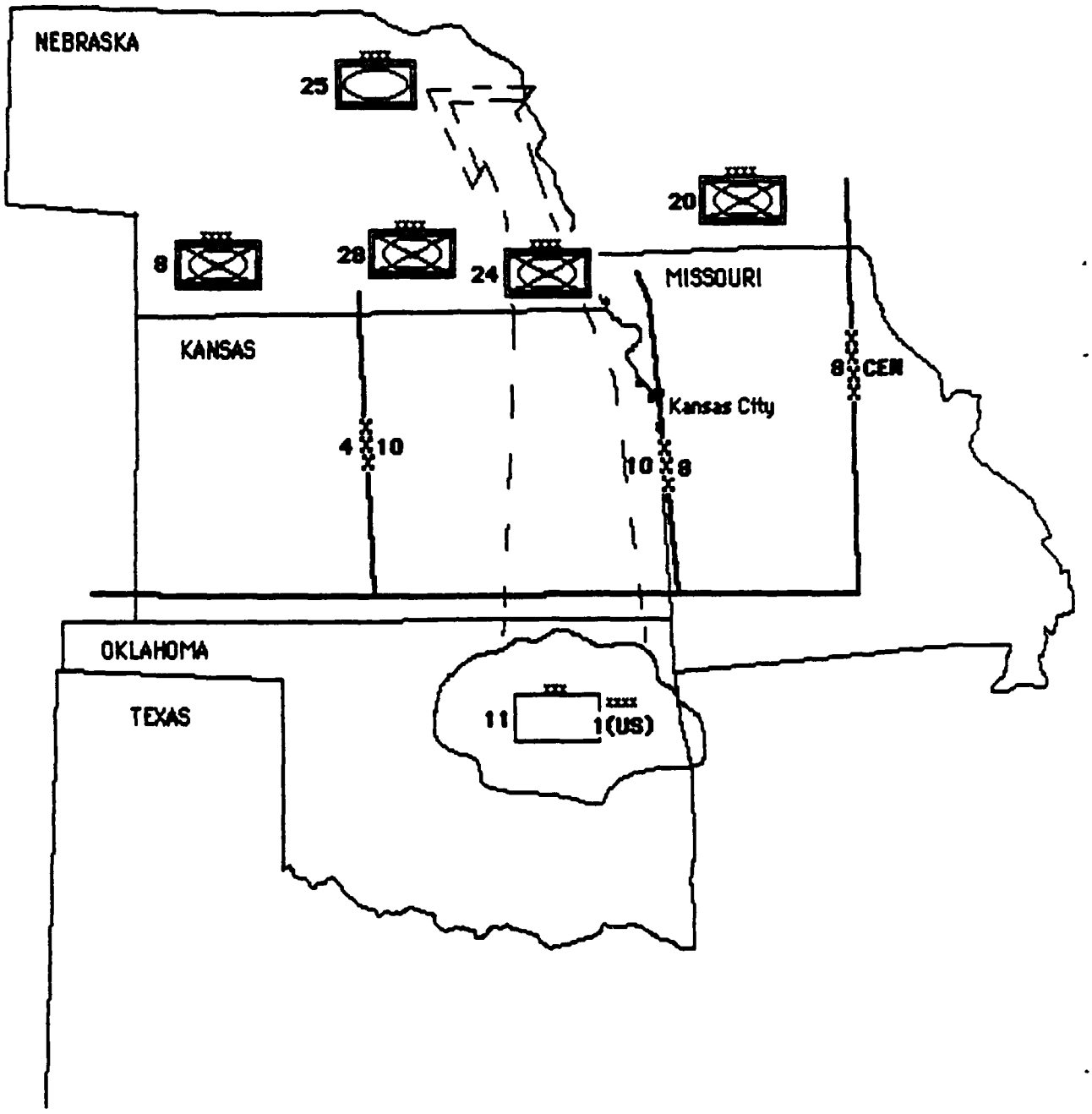
12. 14TH MP BDE * * *

13. 14TH SIG BN * * *

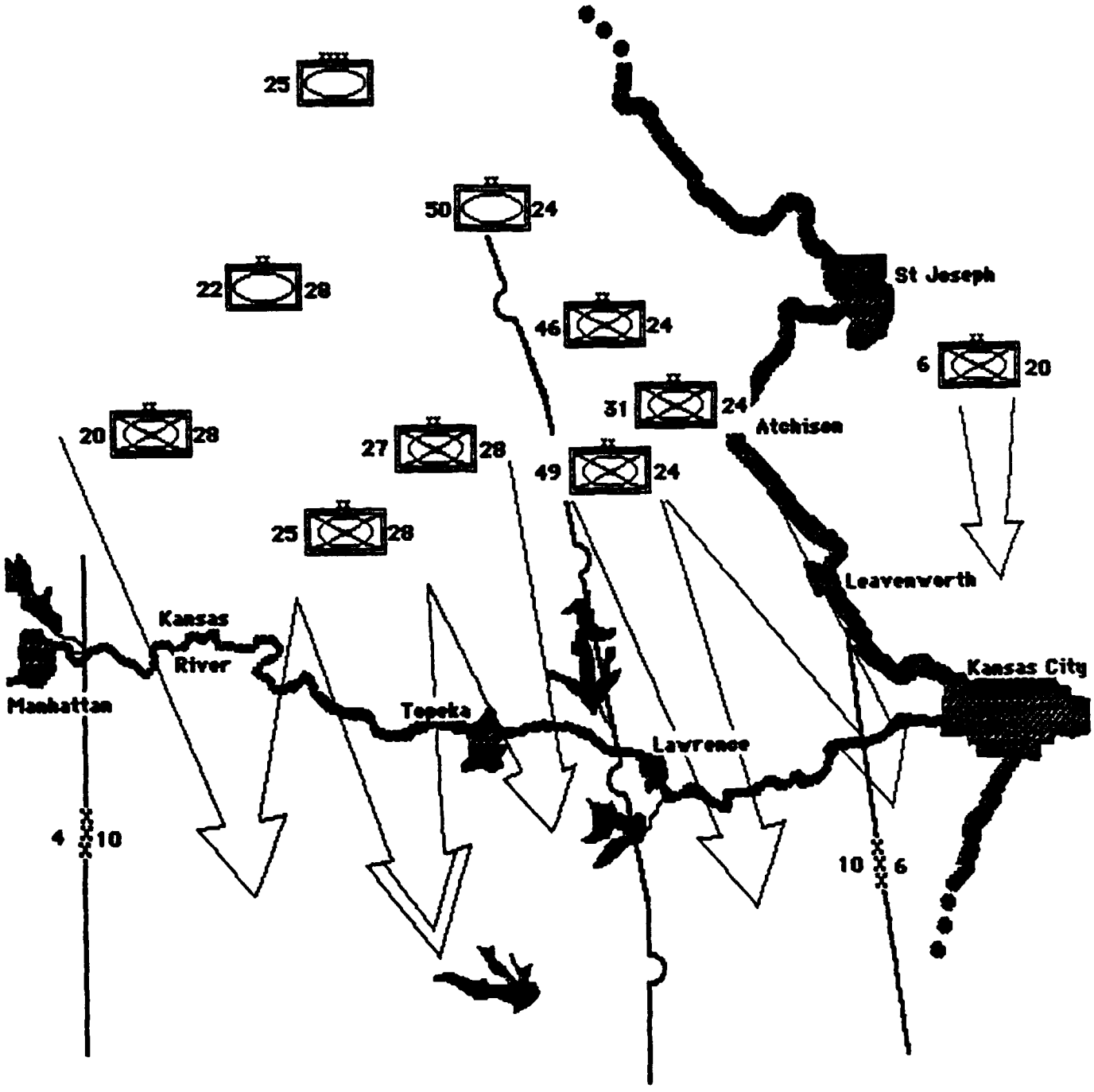
14. 11TH COSCOM * * *



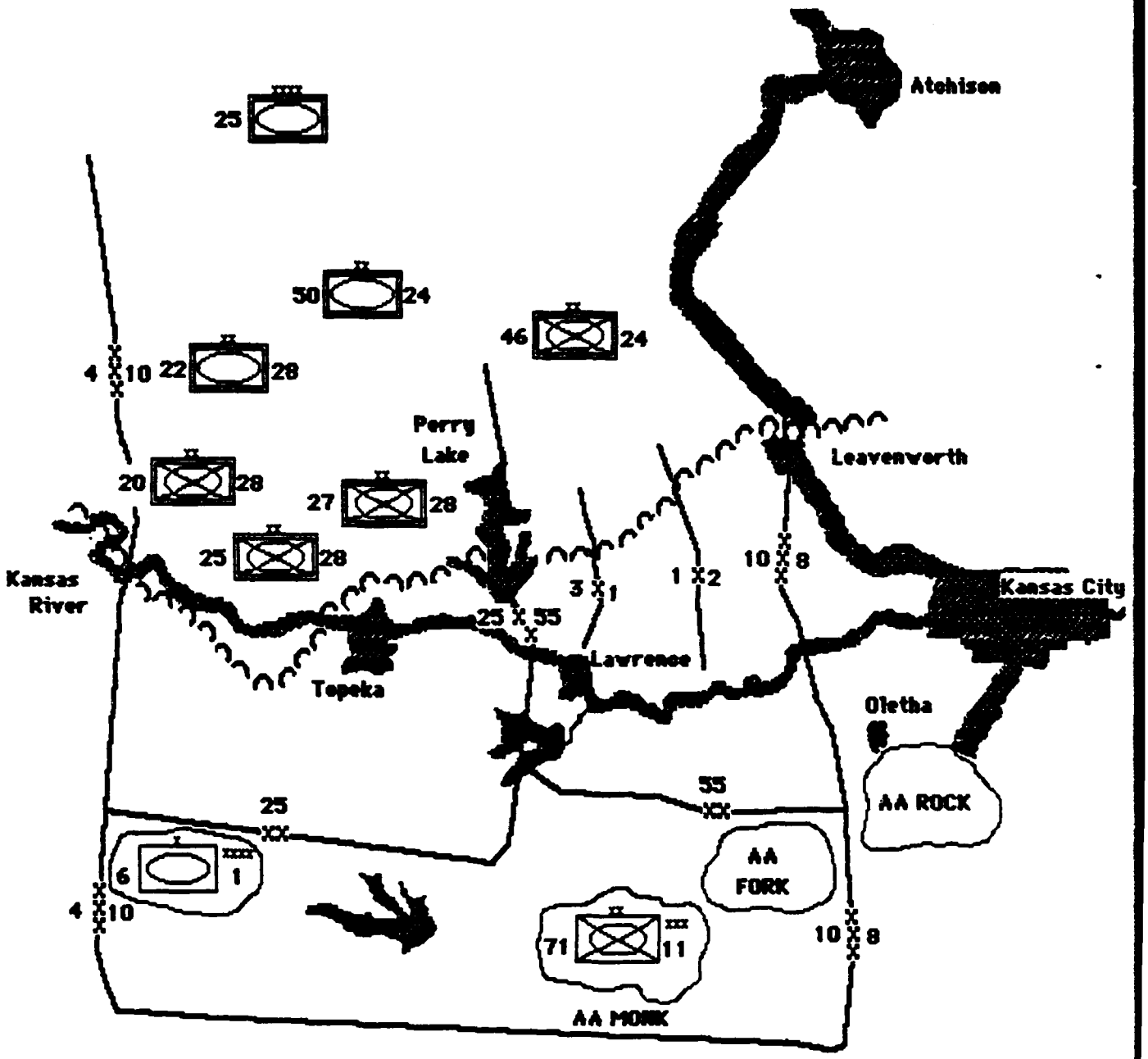
Sketch 1 - 1st Army Group : Threat COAs



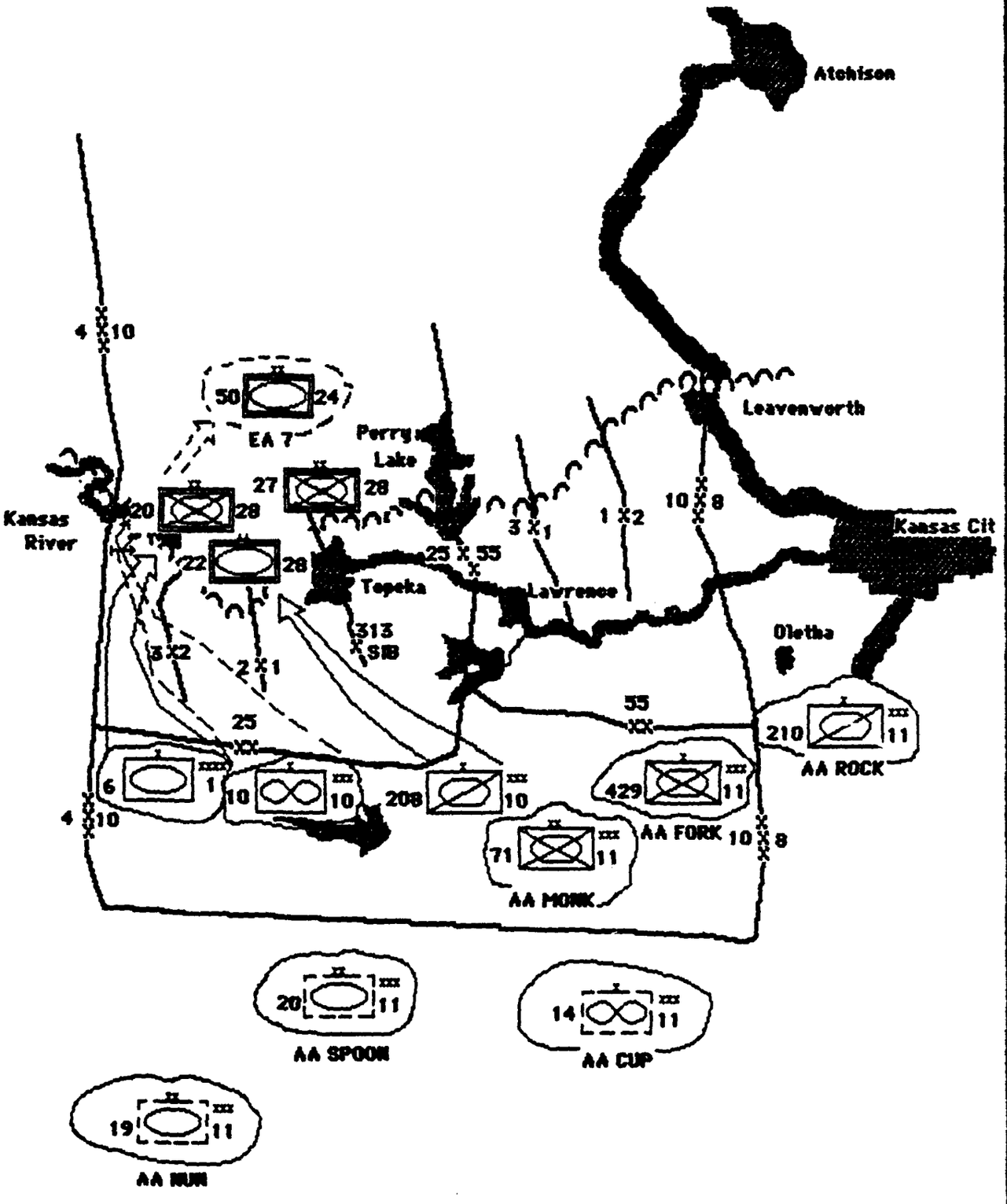
Sketch 2 - Friendly Situation



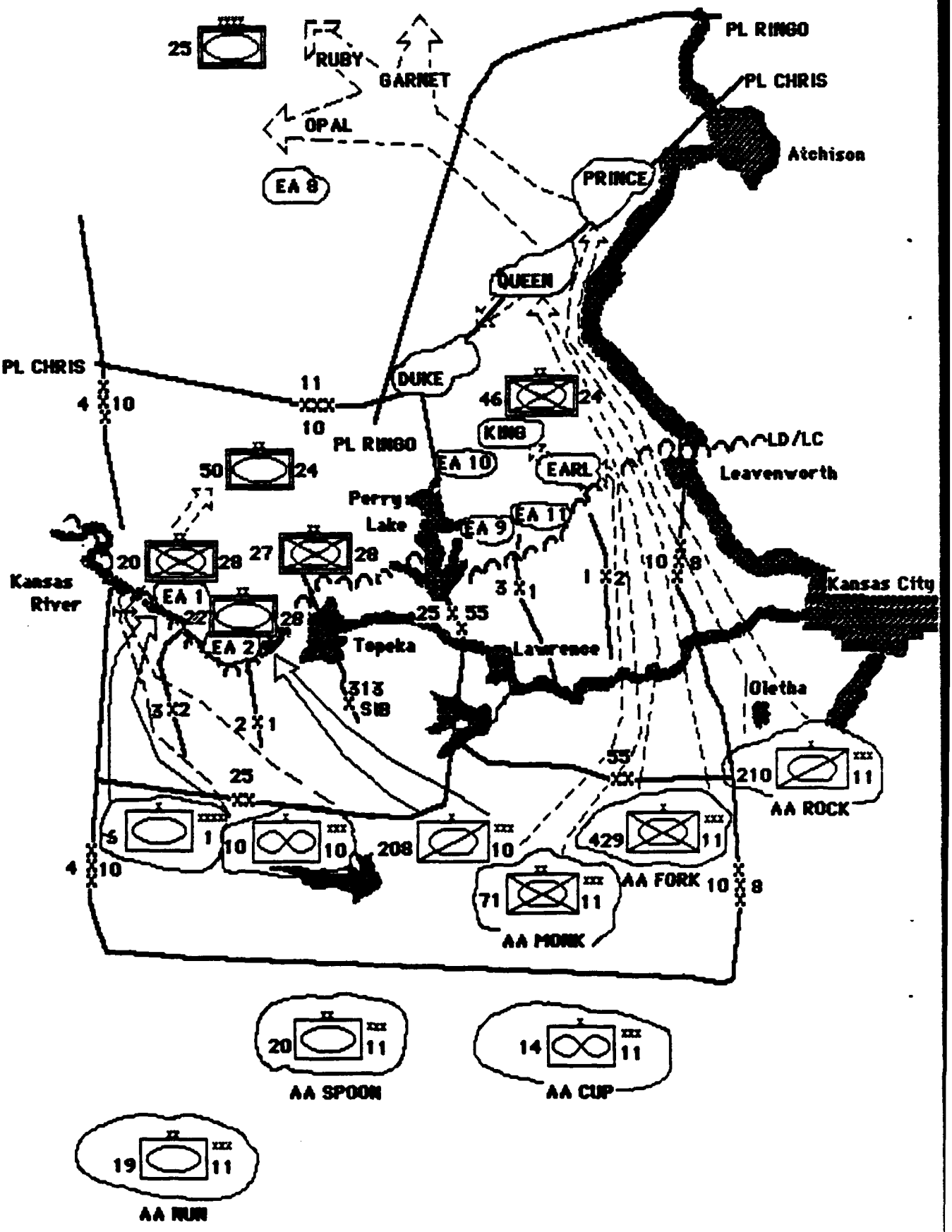
Sketch 3 - Threat Situation



Sketch 4 - 10th (US) Corps Update DTG 0800S D+3



Sketch 5 - 10th (US) Corps Update DTG 0800S D+4



Sketch 6 - OPLAN 4-88 11th (US) Corps - Execution

ANNEX C (INTELLIGENCE ESTIMATE) (EXTRACT) TO OPLAN 21-87 (KAW RIVER)--10TH (US) CORPS

ENEMY SITUATION

1. Disposition.

OSIPOV Front Order of Battle (see TAB A).

* * * * * * * * * * *

2. Strength. The Osipov Front consists of four combined arms armies (28 CAA, 24 CAA, 8 CAA, and 20 CAA) and one tank army (25 TA). threat divisions are estimated at 70-80% strength in personnel and 90% strength in equipment.

3. Most Probable Course of Action. * * *

4. Analysis and Discussion.

a. NBC. The threat may not initially support the attack with tactical or strategic nuclear weapons. He would rather rely on rapid operational successes against US Strategic missile sites in KANSAS, MISSOURI, and ARKANSAS to remove the strategic option and a fast-paced tactical advance to negate the U.S. tactical nuclear option. the threat may opt to support the attack with chemical weapons in an attempt to sustain the initiative or thwart the development of operational reserves, primarily in the area of the TVD main effort. Thus, the 10th (US) Corps will most likely be first subjected to chemical strikes as a result of threat operational considerations elsewhere and as a corollary of threat doctrinal procedures that call for simultaneous employment of chemical agents across the entire front. Once first chemical use has occurred, the 10th (US) Corps would be targeted based more on operational needs of the Osipov Front and subordinate army commanders than in the initial strike.

b. Airborne, air assault, and special operations. Osipov Front will support the attack against 10th (US) Corps with elements of one air assault brigade, four air air assault battalions, and one diversionary brigade to destroy critical C^3 nodes, deny critical crossings over the KANSAS River, and disrupt rear area logistics at army and corps level. Given the depth of the CFA, initial air assaults will be conducted against the 10th (US) Corps main battle area (MBA) to block or disrupt forward movement to GDP positions. After penetrating the CFA, threat interest in air assault operations will shift deeper into the corps and army rear operations areas

with the operational objectives of disrupting logistics and mobilization activities and blocking key avenues for movement of reserves.

* * * * * * * * * * *

TAB A (OSIPOV FRONT ORDER OF BATTLE) to ANNEX C (INTELLIGENCE ESTIMATE)--10TH (US) Corps

Osipov Front
- 28 CAA
- 24 CAA
- 20 CAA
- 8 CAA
- 25 TA
- 7 ASSLT Bde

28 CAA
- 27 GMRD
  - 66 MRR
  - 65 MRR
  - 64 MRR
  - 50 TR
- 25 GMRD
  - 63 MRR
  - 62 MRR
  - 61 MRR
  - 49 GTR
- 20 GMRD
  - 111 MRR
  - 49 MRR
  - 31 MRR
  - 18 MRR
  - 14 MRR
  - 7 MRR
  - 83 TR
  - 49 TR
- 22 GTD
  - 36 MRR
  - 41 TR
  - 19 TR
  - 2 TR
- 2 Atk Hel Regt
- 36 SSM Bde

24 CAA
- 49 MRD
  - 24 MRR
  - 22 MRD
  - 20 MRR
  - 11 TR
- 46 MRD
  - 28 MRR
  - 27 MRR
  - 26 MRR
  - 120 TR
- 31 MRD
  - 48 MRR
  - 47 MRR
  - 46 MRR
  - 95 TR
- 50 TD
  - 3 MRR
  - 15 TR
  - 6 TR
  - 5 TR
- 4 Atk Hel Regt
- 111 ITR
- 3 SSM Bde

20 CAA (not expected in 10th Corps sector)
- 35 MRD
  - 317 MRR
  - 316 MRR
  - 315 MRR
  - 211 TR
- 14 GMRD
  - 411 MRR
  - 410 MRR
  - 409 MRR
  - 210 TR
- 6 GMRD
  - 314 MRR
  - 313 MRR
  - 312 MRR
  - 209 TR
- 15 TD
  - 318 MRR
  - 214 TR
  - 213 TR
  - 212 TR
- 41 SSM Bde
- 12 Atk Hel Regt

TAB A (OSIPOV FRONT ORDER OF BATTLE) to ANNEX C (INTELLIGENCE ESTIMATE)--10TH (US) Corps

8 CAA
- 4 MRD (Cat II)
  - 98 MRR
  - 97 MRR
  - 95 MRR
  - 33 TR
- 39 GMRD (Cat II)
  - 56 MRR
  - 48 MRR
  - 44 MRR
  - 26 TR
- 12 GMRD
  - 23 MRR
  - 11 MRR
  - 7 MRR
  - 28 TR
- 79 GTD (Cat II)
  - 47 MRR
  - 89 TR
  - 88 TR
  - 87 TR
- 46 MRL Regt
- 13 SSM Bde
- 14 Atk Hel Regt

25 TA
- 93 GMRD
  - 58 MRR
  - 57 MRR
  - 56 MRR
  - 69 TR
- 29 GTD
  - 93 MRR
  - 23 TR
  - 22 TR
  - 21 TR
- 17 GTD
  - 24 MRR
  - 32 TR
  - 31 TR
  - 30 TR

15 TD
- 114 MRR
  - 52 TR
  - 51 TR
  - 50 TR

BIBLIOGRAPHY

Books

Bellamy, Chris. Red God of War: Soviet Artillery and Rocket Forces. London: Brassey's Defence Publishers. 1986.

Blumenson, Martin. United States Army in World War II, The European Theater of Operations: Breakout and Pursuit. Washington, DC: Center of Military History. 1984.

Breuer, William B. Death of a Nazi Army: The Falaise Pocket. New York: Stein and Day. 1985.

Clausewitz, Carl von. On War. Edited and translated by Michael Howard and Peter Paret. Princeton: Princeton University Press. 1976.

Eisenhower, Dwight D. Crusade in Europe. New York: Da Capo Press. 1948.

Florentine, Eddy. The Battle of the Falaise Gap. Translated by Mervyn Savill. New York: Hawthorn Books, Inc. 1967.

Heller, Charles E. and William A. Stofft. America's First Battles: 1776-1965. Lawrence, KS: University Press of Kansas. 1986.

Heinl, Robert Debs, Jr. Dictionary of Military and Naval Quotations. Annapolis, Maryland: U.S. Naval Institute. 1966.

Lees-Haley, Paul. The Questionnaire Design Handbook. Huntsville, AL: Paul R. Lees-Haley Associates, Inc. 1983.

Liddell Hart, B. H. . History of the Second World War. New York: G. P. Putnam's Sons. 1970.

Main Front: Soviet Leaders Look Back on World War II. Editorial Commentary by John Erickson. London: Brassey's Defence Publishers. 1987.

Miksche, Ferdinand O. Attack: A Study of BLITZKRIEG Tactics. New York: Random House. 1942.

Niepold, Gerd. Battle for White Russia: The Destruction of Army Group Centre June 1944. Translated by Richard Simpkin. London: Brassey's Defence Publishers. 1987.

Scott, Harriet Fast, and William F. Scott. The Soviet Art of War. Boulder, Colorado: Westview Press. 1982.

Strokesbury, James L. A Short History of World War II. New York: William Morrow and Company, Inc. 1980.

Sun Tzu. The Art of War. Translated by Samuel B. Griffith. New York: Oxford University Press. 1971.

Weigley, Russell F. Eisenhower's Lieutenants. Bloomington: Indiana University Press. 1981.

Ziemke, Earl F. U.S. Army Historical Series-Stalingrad to Berlin: The German Defeat in the East. Washington, DC: Office of the Chief of Military History, United States Army. 1968.

Government Publications

Carlucci, Frank C. Soviet Military Power: An Assessment of the Threat 1988. Washington, DC: U.S. Government Printing Office. 1988.

Department of the Army Pamphlet 20-233, German Defense Tactics Against Russian Break-Throughs. Washington, DC: HQ Department of the Army. 1951.

Department of the Army Pamphlet 20-234, Operations of Encircled Forces: German Experiences in Russia. Washington, DC: HQ Department of the Army. 1952.

Doughty, Robert A. The Evolution of U.S. Army Tactical Doctrine: Leavenworth Papers #1. Fort Leavenworth, KS: USACGSC. 1979.

Eisenhower, Dwight D. Report by the Supreme Commander to the Combined Chiefs of Staff on the Operations of the Allied Expeditionary Force, 6 June 1944 to 8 May 1945. U.S. Government Printing Office. 13 July 1945. [Available in Combined Arms Research Library, Fort Leavenworth, KS]

Field Manual 6-20, Fire Support in Combined Arms Operations. Washington, DC: HQ Department of the Army, September 1977.

Field Manual 6-20, Fire Support in the AirLand Battle. Washington, DC: HQ Department of the Army, 17 May 1988.

Field Manual 6-20-10, The Targeting Process (Coordinating Draft). Fort Sill: U.S. Army Field Artillery School, Feb 1988.

Field Circular 6-20-20, Fire Support Handbook. Fort Sill: U.S. Army Field Artillery School, 30 October 1985.

Field Manual 6-20-30, Fire Support at Corps and Division (Coordinating Draft). Fort Sill, OK: U.S. Army Field Artillery School, 1 March 1988.

Field Manual 71-3, Armored and Mechanized Infantry Brigade. Fort Knox: U.S. Army Armor Center, March 1987.

Field Manual 71-100, Division Operations. Washington, DC: HQ Department of the Army, November 1988.

Field Manual 100-2-1, The Soviet Army - Operations and Tactics. Washington, DC: HQ Department of the Army, 16 July 1984.

Field Manual 100-5, Field Service Regulations - Operations. Washington, DC. HQ Department of War, 22 May 1941.

Field Manual 100-5, Operations. Washington, DC: HQ Department of the Army, 5 May 1986.

Field Manual 100-15, Corps Operations (Coordinating Draft). Fort Leavenworth, KS: U.S. Army Command and General Staff College, January 1988.

Field Manual 101-5-1, Operational Terms and Symbols. Washington, DC: HQ Department of the Army, October 1985.

From the Dnepr to the Vistula: Soviet Offensive Operations--November 1943-August 1944. A Transcript of Proceedings, 1985 Art of War Symposium. Center for Land Warfare, U.S. Army War College. August 1985.

Glantz, David M. American Perspectives on Eastern Front Operations in World War II. Fort Leavenworth KS: Soviet Studies Office, U.S. Army Combined Arms Center. April 1987.

Headquarters Third Army. After Action Report, Third US Army, 1 August 1944-9 May 1945. Volume II, Staff Section Reports, Part 9, Artillery. [Available in Combined Arms Research Library (CARL), Fort Leavenworth, KS]

Joint Chiefs of Staff Publication 1, Department of Defense Dictionary of Military and Associated Terms. Washington, DC: Joint Chiefs of Staff, June 1987.

Matsulenko, Viktor Antorovich. Encirclement Operations and Combat. USSR Report translated by FBIS from MILITARY AFFAIRS. 1983.

Studies on Soviet Combat Performance. A Report Prepared for Director of Net Assessment Department of Defense Under Contract Number MDA903-76-C-0273. Dunn Loring, Virginia: Historical Evaluation and Research Organization. June 1977. [Available in Combined Arms Research Library, Fort Leavenworth, KS]

Union of Soviet Socialist Republics. Red Army Field Regulations (1944). Translated by the Foreign Broadcast Information Service (JPRS-UMA-85-006), 17 January 1985.

Periodicals and Articles

Angsten, Joseph J., Jr. "Bypassed Enemy Forces and the Corps Attack." Military Review. (January 1980): 69-74.

Dick, Charles J. "Soviet Operational Concepts: Part II." Military Review. (October 1985): 4-19.

Donnelly, C. N. "The Development of Soviet Military Doctrine." International Defense Review. (No. 12/1981): 1589-1596.

Glantz, David M. "The Nature of Soviet Operational Art." Parameters. (Spring 1985): 2-12.

Hallada, Raphael J. "Field Artillery Vision: Master Plan for Fire Support of the Future." Field Artillery Journal. (February 1988): 5-13.

_____. "On the Move." Field Artillery Journal. (April 1988): 1.

_____. "On the Move." Field Artillery Journal. (October 1988): 1.

Hines, John S. "Soviet Front Operations in Europe: Planning for Encirclement." Spotlight on the Soviet Union, A Report from a Conference at Sundvollen, Norway, 25-27 April 1985. Alumni Association of the Norwegian Defence College: Report. (1/86): 74-101. [Publishers were co-sponsors of the conference by DOD, OSD Policy Support Program's Staff, Washington, DC 20301, ATTN: Dr. Phillip A. Petersen.]

Ingram, Bernd L. "3x8 and Beyond: Force Structure Changes for the Field Artillery of Tomorrow." Field Artillery. (February 1989): 19-23.

Kent, Richard S. "Preparing for the Breakout." Military Review. (July 1981): 60-73.

Kingseed, Cole C. "The Falaise-Argentan Encirclement: Operationally Brilliant, Tactically Flawed." Military Review. (December 1984): 2-11.

Korbin, N. "Encirclement Operations." Soviet Military Review. (No. 8/1981): 36-39.

Lind, Henry D. "Break-Out From Encirclement." Military Review. (June 1951): 49-62.

Marsh, John O., Jr. "Army Training: Ancient Roots, Future Benefits." ARMY. (October 1988): 12-18.

Schultz-Naumann, Joachim. "The Demyansk Pocket, March-April 1942." Military Review. (December 1957): 77-84.

Shtrik, S. V. "The Encirclement and Destruction of the Enemy During Combat Operations Not Involving the Use of Nuclear Weapons." Voyennaya Mysl. (January 1968): 279-292.

Stallings, Gary M. "TOPFORM: 3 x 8 Tactical Operations." Field Artillery Journal. (June 1988): 40-51.

Vernon, Michael H. "Encirclement Operations." Military Review. (September 1986): 11-17.

Wharton, Richard W. "Survivable Hardware Coming? You Can Bet On It!" Field Artillery Journal. (April 1988): 10-14.

Unpublished Materials

Curran, Robert J. "Shutting the Door: U.S. Army Doctrine for Encirclement Operations at the Operational Level of War." Masters of Military Arts and Science Monograph, Fort Leavenworth School of Advanced Military Studies, 1986.

Gay, Mark P. "The Field Artillery In Support Of Deep Offensive Missions." Masters of Military Arts and Science Thesis, U.S. Army Command and General Staff College, 1985.

Gutwald, Rich. "Tactical Encirclement Reductions." Masters of Military Arts and Science Monograph, Fort Leavenworth School of Advanced Military Studies, 1986.

_____. "The Effects of Operational Encirclements", Masters of Military Arts and Science Monograph, Fort Leavenworth School of Advanced Military Studies, 1987.

Morton, Gregory V. "Field Artillery Support for III Corps Attack 18-26 December 1944." Masters of Military Arts and Science Thesis, U.S. Army Command and General Staff College, 1985.

Tiberi, Paul. "Encircled Forces: The Neglected Phenomenon of Warfare." Masters of Military Arts and Science Thesis, U.S. Army Command and General Staff College, 1985.

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